

## SEQUENCE LISTING

<110> CAIRNEY, JOHN  
XU, NANFIE

<120> DIFFERENTIALLY-EXPRESSED CONIFER cDNAs, AND THEIR USE  
IN IMPROVING SOMATIC EMBRYOGENESIS

<130> 7648.0023-00

<140>

<141>

<150> 60/239,250

<151> 2000-10-11

<150> 60/260,882

<151> 2001-01-12

<160> 339

<170> PatentIn Ver. 2.1

<210> 1

<211> 567

<212> DNA

<213> Pinus taeda

<400> 1

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aagatcacat accaggtggt ggagcagatt cgatagatat tgaagatatg aagccaagga 180
gtggagcagt tattgaaaag ggcacaaaaa aatttgccat ttacaaagat gaaaatgggc 240
tgattcacaa atactcggca atatgccac acatgaactg tattgtgaaa tggaatccta 300
tagactcaac tttegattgc ccctgccatg gttcaatgtt tgataatctg ggtcgatgca 360
tcaatggacc tgccaaggcg gacctatttc ccgaagatta acgatagttg tttgtacatg 420
taattatctt gatattgtat atatatgtat ttaaattata cagtacaata aatccatgtt 480
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tgtttttccc ctggcaaaaa aaaaaaa                    567

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<210> 2

<211> 276

<212> DNA

<213> Pinus taeda

<400> 2

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aaaaacgcca tagcgacgga tgactgtaaa tccttaggga cggatgactg taaatcctta 180
ggttggaaga ttacaaacga catatgggtc tttcaatttt cagatttctg taagacttac 240
atttcaaaga ctgtttggat gggcaaaaaa aaaaaa                    276

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<210> 3

<211> 267

<212> DNA

<213> Pinus taeda

&lt;400&gt; 3

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aaaatctaaa gagtgtatag tatcagtggg tttgtatttc ctagtttgcc tacaataacg 120
atggggattc accagttttt gtagaatttg caatcatcgg atgacaattt caaagttttc 180
tctaagtcac ccgcattgat atcgagaagc cttccatttt caattattta atatcagaaa 240
atcttttcag ttggcaaaaa aaaaaaa 267

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&lt;210&gt; 4

&lt;211&gt; 589

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 4

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agcccagctg cgaaggggat gtgctgcaag cgataagtgg taacgccagg tttccagtca 60
gacgtgtaaa cgacgccagt gatgtatacg aatcactata ggcgatggcc ttctagatgc 120
atgctcgagc gccgcagtgt gatgaattgc agaatcggct ggtactcacg ggctagagaa 180
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ttttttatct gctttcaagt gattatttgt tgattcccca tggatagtta tgctaatacag 480
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&lt;210&gt; 5

&lt;211&gt; 431

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 5

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tccaaaatac aaaggcttta tttgcatcat gatataatac aaagtaagaa atttacccaa 60
ctgtttaacc taataataat acaaaggaag cattttaccc aactctttaa cgtaataata 120
ccaaagagtg gaatgcttta ttgaccagca agaccttgaa atttttataa ccaatgcccc 180
tcaacagagc ctttcttaaa aaacgcaaag cccagctctg tcaccttatt agttagtata 240
aactgacatt cttccaagct tgtgtgcgca gaaacaataa agaacttcac cttgggttta 300
agaacgtgcc atgaagaaaa cgtcccaaga aaaatgaaat ggctccttcg accattcagt 360
cctccctaga aaaatcaaaa gactccttcg accattaggt cctccaattg ggcatctaac 420
tacaagcggc c 431

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&lt;210&gt; 6

&lt;211&gt; 434

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 6

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ggtactccac gggctagaga aaaggcacia gcacttcttc gtcatttttag ggatcagagg 60
cattcaggta taggaagggg tggctcagat aggcagatgg atcggcattt tgcccagtca 120
tgaaacattt tatgcatgtt attgcctccc aaggacgaaa tcagttcttt gtgccttctg 180
gtgatatac ttcaaacaaa aggcaacagt tctgtgattt catatggttt gtcactgaat 240
atthttgttc agatgttctc tactatthttt tatctgcttt caagtgatta tttgttgatt 300
ccccatggat agttatgcta atcagttgca tttctcttgt accagtcaac aaacaaaaat 360
gcttgtagga atccattact atthattttt agacaggtaa acgtgtagct aattgttctg 420
gcaaaaaaaaa aaaa 434

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<210> 7  
 <211> 540  
 <212> DNA  
 <213> Pinus taeda

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 ggctagagaa aaggcacaag cacttcttcg tcatttttagg atcagaggca ttcaggtata 180  
 ggaaggggtg tcagataggc agatggatcg gcattttgccc cagtcatgaa acattttatg 240  
 catgttattg cctcccaagg acgaaatcag ttctttgtgc cttctgggtga tatcacttca 300  
 aacaaaaggc aacagttctg tgatttcata tggtttgatc ctgaatattt tggttgcagat 360  
 gttctctact atttttttatc tgctttcaag tgattatttg ttgattcccc atggatagtt 420  
 atgctaataca gttgcatttc tcttgtagca gtcaacaaac aaaaatgctt gtaggaatcc 480  
 attactattt attttcagac aggtaaacgt gtagctaatt gttctggcaa aaaaaaaaaa 540

<210> 8  
 <211> 794  
 <212> DNA  
 <213> Pinus taeda

<400> 8  
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 tttaatggag tttgaggcag ggatggccta tgataaacct gaaaatgccg gtgcaggtaa 180  
 tgagaatttg ccagagtttt gctctctttc aaatgagtag tcgatgttat tgaaagatcc 240  
 atggagttgg gaggatagca ctgggtttcgg aatccgaagc ttagctgctg tcaggaagca 300  
 gtcttgatata ttggactatc tccatgattc tgctgtagat aatcgctgtg aaaaggattt 360  
 tgccgagcag cacaaggtag aggaagagga ggattgtttg agaagggtctc tttttgaagc 420  
 cacagatgat cagctctgga ggcttcagag tctttgcagg atacagaagg tctgtttcct 480  
 ctggattccg tgggtagcca tgattgcacg accttggtgc aggatgagag cattgttcag 540  
 ggcgctgctt ctactttcag aatttgggaa caggatgatg gtcacaagga tgccaaaatt 600  
 catgaagatg gcattgggtt tgtgtatggg agtgggatct cggattggat tcggagggct 660  
 ccctcgaatc aatctgagtt ttctgaatct gttgaatttg aaagctctat gttttcactg 720  
 taatttgggt ctttttaatt tcttcctatg taatttgggt gtttctaatt tcttccttca 780  
 gcaaaaaaaaa aaaa 794

<210> 9  
 <211> 330  
 <212> DNA  
 <213> Pinus taeda

<400> 9  
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 atgttgctgg cagtagagct ggagatgtgc tgtctctttg gtgtcattag cacagaagct 180  
 attggagaaa tgattattat ctgtttgata acttctagag catttttctg cttccaattc 240  
 cacaagggtg aaagtgaag gatgtttact ttcttaact gtacttgcct tgtatttgat 300  
 gatgtaagggt tgtgtggcaa aaaaaaaaaa 330

<210> 10  
 <211> 515  
 <212> DNA  
 <213> Pinus taeda

&lt;400&gt; 10

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ccgtcggtttt cttgatctcg gagccaagca agtggatgtg atcactaaat gttgctggca 120
gtagagctgg agatgtgctg tctctttggg tcattagcac agaagctatt ggagaaatga 180
ttatgggtatt ccaccatata caggtaaaca agggaaaaca gagctcagct tctagtatgt 240
tgtatgccct gctctgtctg ttttctttga tctttgatgc caagcaagtt gaatgtgatc 300
actaaatgtt gctggcagta gagctggaga tgtgctgtct ctttgggtgc attagcacag 360
aagctattgg agaaatgatt attatctgtt tgataacttc tagagcattt ttctgcttcc 420
aattccacaa ggtggaaagt gcaaggatgt ttactttctt aaactgtact tgccttgtat 480
ttgatgatgt aagggtgtgt ggcaaaaaaa aaaaa 515

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&lt;210&gt; 11

&lt;211&gt; 331

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 11

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ggtactccac catatccatg taaacaaggg aaaacagagc tcagcttcta gtatgtagta 60
tgccctgctc tgtctgtttt ctttgatctt tgatgccaa caagttgaat gtgatcacta 120
aatgttgctg gcagtagagc tggagatgtg ctgtctcttt ggtgtcatta gcacagaagc 180
tattggagaa atgattatta tctgtttacat aacttataga gcatttttct gcttccaatt 240
ccacaaggtg gaaagtgcaa ggatgtttac tttcttaaac tgtacttgcc ttgtatttga 300
tgatgtaagg ttgtgtggca aaaaaaaaaa a 331

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&lt;210&gt; 12

&lt;211&gt; 241

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 12

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ggtactccac tagaccgggt agggctctct catggttttg cgacttaggt taggtgtcct 60
gttctgttaa tgattttgag gttttgtaat tgtgagtatg tttccagggt tttgaacctg 120
ggtactcggc ctttgttgga atgtagtctg gttaatttat atgtatatgt aaccttgggg 180
tttcgagccc agttctctgt tcttcttgaa atgaaatgcg atttgttcta aaaaaaaaaa 240
a 241

```

&lt;210&gt; 13

&lt;211&gt; 247

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 13

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atatatacgt atggtattcc acagcatgaa ctcttcgaca ttatatgctt gttatagttt 60
ttaagagagg agacttacct cacacatgta cagcttttta ttgtcgtgct ttcagttgat 120
ggatgattgt ttagtcctg tcattgggtg gacaattttc atcatcctaa agatccaaga 180
attcatgtgg caagaaactt taataaagtc aaatataatc cgatgacgta accctaaaaa 240
aaaaaaa 247

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&lt;210&gt; 14

&lt;211&gt; 197

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

<400> 14

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ggtactccac tagtgatcga ttctctgtat gtgacgctgc gcggcggtt atagcgcttc 60
actgagaatg tacggatatat tatgattgat gtgatggatt tgctccgcag cttcggctgt 120
tgtatctgct cacttcggcg tatatatgta atatgttgct tcttcagaga gatgaacttc 180
cccctaaaaa aaaaaaa 197

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<210> 15

<211> 177

<212> DNA

<213> Pinus taeda

<400> 15

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atagatcatt ttaaagtttc agtgatttga atctaattcc actgcatttc ctgcgaaact 60
ggcagtcaaa tagtattccc tctttcagtg acaggctggc aggtgtttca ttcttataca 120
aacatgatta tcataattcc attaattcat ggcgttttct ttgccaaaaa aaaaaaa 177

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<210> 16

<211> 475

<212> DNA

<213> Pinus taeda

<400> 16

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ggggtgactg agaactcaga cacagacgac aagtgatcat tcgggccaga tttttgttga 120
gagagtgtga gtgtgtaatt gattcatttc atacatttga tatgcaagcc tgtacaatag 180
cctgtgactg ttaagggcat tcttttgtct ccctgttgct atttgggttt ccggtgtgtt 240
cattttcact tatttttgtg ttttagctgg aagaatttga gagggtagaa ttgtgtcatc 300
gctatggctt gtgcatgact catgagccag cagttgaaac ttttatttat taagttataa 360
tactatgtct tgtcaattct caataaaaga tatttttatgc tgttgggcag catctaaaat 420
gttttgtatg ttagcataaa atcccatttt ctataagttt ttgccaaaaa aaaaa 475

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<210> 17

<211> 592

<212> DNA

<213> Pinus taeda

<400> 17

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tggccttttag atgcatgttg acggcccgcga gtgtgatatt cgcagatcgc tttttttttt 120
ttttaggcat ggtgcgcgat gagctgatag cgatgatgaa gaccaagacc accaaaggaa 180
gattcttcag agcaaaagct acggagacag aaccagagga ctcaaagccg gaatccattg 240
gtgaggtagc tgcaaagtgt tgatggacta actaagaagg ctcttgaga ggaccatta 300
agcacagtgt ttttaagtcc caaattctgt tgcaattccg ttgaaaatca tttttacgat 360
tttaggtatg atgtgtgcaa ttttaaagtt ggaattattg tgggcaaagg ctataagtga 420
ttgtctaate catttaattt attatctttt gactaagagc atatctaggc tggaagaaat 480
tagggcacat taatgtaagt tttgaatttg aacattctgg gttttgcaat gcaaaacacc 540
acaaatattt tataatgtta gaggtgtact ttttctggcc aaaaaaaaaa aa 592

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<210> 18

<211> 204

<212> DNA

<213> Pinus taeda

&lt;400&gt; 18

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tttctgtcca cccacttta gagtctcagt ttgtaaagca ctccctagga gctaaactca 120
tttccaatgg attaaagcac tccataggag ctaaactcat ttccaaggga tttttgtcca 180
tttctctgtg ctaaaaaaaaa aaaa                                204

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&lt;210&gt; 19

&lt;211&gt; 347

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 19

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atgtatacat atatgtggta ctccacacac tcaaataaca gcatcacaat caaaacaaga 60
aggcggccag aaagctttaa aatgctaagc ctacaggtaa tattcacaac tgcattaagc 120
accccgcttc ctagttctga agaagccaga aagctttaaa atgctaagcc tacaggtaat 180
attcacaact gcattaagca ccccgcttcc tagtaggcta gtactaggac taggaccgca 240
ttaccagttc ccttatcttc tactcatcct ctacaggaaa aactatgact aaaactgcat 300
taccagttcc cttatcttct caactcgtcc tctacaaaaa aaaaaaa          347

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&lt;210&gt; 20

&lt;211&gt; 376

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 20

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ggttaatttcc acccaccacg ggctttttca attaaccat ttctaccact ccacattagg 60
gttctaagtt ttgtgactca cccccaattt cgctgatatt ttgcattgca gcttgtttat 120
ctacaggaaa tggctaataca gtactttcag aatttggttg cttctgtaca ggaaatggat 180
aatcaatcag tacttctata ctttaagttgc ttacgcgggg atcagagcct tacttcagaa 240
aattgaatac attttcttct ttgtgtatgt atcaggcatg gaattatatg tagcatgccca 300
tggaatgcgt atttactaga ttatctttta atttaataca tatgttgctt actaatttgt 360
ccacaaaaaa aaaaaa                                376

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&lt;210&gt; 21

&lt;211&gt; 332

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 21

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ggtactccac acactcaaac aacagcatca caatcaaaac aagaaggcgg ccagaaagct 60
ttaaaatgct aagcctacag gtaatatcca caactgcatt aagcaccocg cttcctagtt 120
ctgaagaagg ccagaaagct ttaaaatgct aagcctacag gtaatatcca caactgcatt 180
aagcaccocg cttcctagta ggctagtact aggactagga ccgcattacc agttccctta 240
tcttctactc atcctctaca ggaaaaacta ggactaaaac tgcattacca gttcccttat 300
cttctcaact cgtcctctac aaaaaaaaaa aa                                332

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&lt;210&gt; 22

&lt;211&gt; 238

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 22

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ggtactccac tattagattg atgcaagacc aactgatcat ggctagggtg tattcaagca 60
tttcccaggc taggaataat cttgatttat accatgaatt gatgcttcgt attaaagaat 120

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gtcaacgtac attgggtgag actaatgccg attctgatct acctcaaagg taataatttt 180  
 tgcattagct gcttctaaat caagagtagt aagtgttcc atttgcaaaa aaaaaaaa 238

<210> 23  
 <211> 170  
 <212> DNA  
 <213> Pinus taeda

<400> 23  
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 acattcagca atattaattc aggggtagca tttctggcaa aaaaaaaaaa 170

<210> 24  
 <211> 152  
 <212> DNA  
 <213> Pinus taeda

<400> 24  
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 atacgtacaa attaaattgc caaaaaaaaa aa 152

<210> 25  
 <211> 197  
 <212> DNA  
 <213> Pinus taeda

<400> 25  
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 tccgtattcc cttgggtaag ctgtaatggc cattttggga acagtccatg tttgggacac 120  
 aagttcaata gagatgtcat ccataaatat gggatgaat ctcttccttc cctctccgcc 180  
 caataataaa aaaaaaa 197

<210> 26  
 <211> 199  
 <212> DNA  
 <213> Pinus taeda

<400> 26  
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 gaccctacc ccaaaggat taattgtact ttggcttaac cacaaaacct gattcaaaaa 120  
 atgtgaagtt tttaccatt aaattaattc ccaaagtaa ctacaaattc cagagtacat 180  
 ttttacccaa aaaaaaaaa 199

<210> 27  
 <211> 455  
 <212> DNA  
 <213> Pinus taeda

<400> 27  
 ggtactccac tatacaatat caaggcatat ctgccggttg ttgaatcatt cggattctca 60  
 agcactctcc gtgccgcaac ttctggccag gctttccctc aatgtgtgtt tgaccactgg 120

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gatatgatgg gatctgatcc attggaacct gggtcccaag ctgggcagct tgtgactgat 180
atccgtaaga ggaaggggtct taaggagagt atgactccct tgcagagatt cgaagacaag 240
ctgtagagct ttgctatgtt tgcattgtcg atgctgtcaa gattgaggaa cctccgagta 300
ttaaaacaca gttttgtgtg ctaggactat ttaaatttat gctattcacg ttttttgtg 360
atctgttatt tatgttattc acgtattttt gattggaaaa tactttttac aagtcacca 420
ttaatctttt aaatggtaca taattctctc ttgtc 455

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<210> 28  
 <211> 93  
 <212> DNA  
 <213> Pinus taeda

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<400> 28
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ggtactccac tataacaacat caaggcatat ctg 93

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<210> 29  
 <211> 28  
 <212> DNA  
 <213> Pinus taeda

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<400> 29
cttttcttcg tgcttttcgt ggagtacc 28

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<210> 30  
 <211> 156  
 <212> DNA  
 <213> Pinus taeda

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<400> 30
ggtactccac aaagtgagat gagtgatatg aggtcaaaca cgtaaagtac aatagctatt 60
atttccccac ttgtttgtgg ctgtgtatat tatacttcat tgcaggact tttgtatggt 120
tgaagttgca aggttttggc aaaaaaaaaa aaaaaa 156

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<210> 31  
 <211> 421  
 <212> DNA  
 <213> Pinus taeda

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<400> 31
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tctgccaagt gaaccagaag gcttctgttt ctacactagc aaactgatag ctcgagcatt 120
ctcattttact aaggatgata attcaaaatt gtaacattgc aaacatcagc aaacatcagc 180
atcaactctg ttactattac aagcaatgga tgcgtcgtcg atgctgcggg agagtaaatt 240
tttagtttac tgcggttggt aattgagtag gttgacttac atttctgttg taaagccggt 300
gtcgggcatt gtttatctgg ccgagtttag gccaggaagc taaatgtacc aaatatttat 360
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a 421

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<210> 32  
 <211> 163  
 <212> DNA  
 <213> Pinus taeda

&lt;400&gt; 32

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athttccgag gaaggcattc taagccattc ccaccgtact ttaataaaat aaaaacaaga 120
agatagtaaa gctaagctac aaccttccgc caaaaaaaa aaa 163

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&lt;210&gt; 33

&lt;211&gt; 554

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 33

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gaccgcttgt aggaacacta gcagattccg gaacataggt actttgaaca tctttcactc 60
ctcaccatat gaatagttag tcatgagcgg ccttaacagt cgagcatgct ttgatttcgt 120
ctctctctct agtgaccgaa atcaatctca ttatatatgt cattatgcat tcattcccac 180
ttcctaactt tcattattgt tcaaaacttc gccttcctga aaatgctata atagtagggg 240
aatattgaaa aacttccgcc aagctaaaaa ggcacttaaa gcacctggat ttgaaccagg 300
athttcccacc ccgatgaggg ggggtgtctt tccattgaga cgatgcctta ctcggcagac 360
cctgtggggg tctttatagg tgacttaata cttaagtata ggacttaaga gagaggaagc 420
gaccgcctct ctgatcaagc ctttacgtgc gacgtgccca ggtaaaggct gatctcacca 480
aataattcag agaaagaaga tgactccaca gtagcgaaac tcctacattg tcttacatat 540
cgtaacaagc ggtc 554

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&lt;210&gt; 34

&lt;211&gt; 557

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 34

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gaccgcttgt gcctgggtgct caaactagga cgccttagtt ttcctaagaa ggaaacccag 60
gcgttgactt gaggcagact tgtgcttctg ggtactctca ttcactgctg gaccttgaga 120
aagggtactt acctccagga tcctcaaact tcttctctgt aaaatgagca ttgtaataat 180
tatatcccag gcttatgttg ggaatattca ataaatgctc ccttcattct ttaaaaaata 240
agtaaagaca gcctgaatgg gagccacgtt ctcatcttc tttctctatg caaaatgtat 300
tgtgtaatgt ttgtgtacta gtagttcaag agcaaataag tagttgggta atgggctaaca 360
tatttcttaa atttgtaact gttaagataa acattgaaca aggaaaaaga ttcgtaactg 420
aatgtaaag tcatttgacc ctggatagtc aatgacaatc ttattcacag tgtaataagt 480
aattcataac gagatgatta ttatgaaatt atcaatagcc tgctatatca ctttatgttt 540
atgatccaca agcggtc 557

```

&lt;210&gt; 35

&lt;211&gt; 373

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 35

```

gaccgcttgt ggaagaaaag aaagaatctc tttcggattc aataggcggt atgggagagt 60
ctgctactgc ctcttgatt ccaggaatcc tagagctggg agtatgagtt ggagatgatg 120
aagggtgtct ttacctatct cttgaagtgg atggagttgt gaaaatcgaa cttctagctt 180
cagctaaaaa ccttccccta gaatctcttg ctctatgcat atcattttta ttttttcttt 240
caagataggg taataattct ctttctgata ttccagggtc ctctaggtgc aagaagagag 300
catagtcaag gaactattaa accaataact ttctcttttc tgatcctcca gttcactcta 360
ggtacaagcg gtc 373

```

<210> 36  
 <211> 485  
 <212> DNA  
 <213> Pinus taeda

<400> 36  
 gaccgcttgt gcaaagtaga taccgtcctg ttccggtgaa ttgaagtaca ttttcaaaat 60  
 gcgctactat gacattttat aggatgtctg agtgtaaaat aatgggtactg gttgttgcaa 120  
 agaatctgat gtttggatgt atggaactat aaatagatgt tatttttctga tccagaaggc 180  
 tttccttacc aactgatttc atcttcagaa actaaaagct cttgaacttg tgtagatggg 240  
 gcttggtcat tgtagttaa atgcattatg tagtggcaaa aaaaaaaagt tatagcctac 300  
 gtttcaaagt gatttgctcg acaatcaaat gaattacaat tgaatattca tgtataccca 360  
 aatttttaaat gtagaatgac atcatcaatg tagacaaaca ccactgtgct tgtccttgat 420  
 atcctctttc accatataat tgggtggctta ctcaaagtca ctatctgatg caactacaag 480  
 cggtc 485

<210> 37  
 <211> 500  
 <212> DNA  
 <213> Pinus taeda

<400> 37  
 gaccgcttgt tcaatgcaga atctcgaaga gatgtcttgg acaaatactg aactggcacg 60  
 attggtgtag tgcggttcaa aaggcgctcc agattcgtct ggaacgaatc ttcatacgct 120  
 gaacaattag acatcttgta cgcaagagaa ttacgatcgg ccatataaaa accccaaaga 180  
 gaagaaagtg tttcgaaatt ctcccagaaa acagtcttat gccaccgatt tgtcttttca 240  
 acatgcattt gcaatgaagt ctttggattc ttactgtgag tgctgatcag caacggattt 300  
 tcgatctgta tagctctgcc gattcctggg taaagcagct aagagttagg catccagatt 360  
 ttgagttttt tgcattctac aatgtttgaa tacatttcaa atccattgtt ggagtaacct 420  
 aacaacaact gtactcttct tcctatttct gaagccctct gccagtttaa ggcagagaac 480  
 tgagttatct acaagcggtc 500

<210> 38  
 <211> 398  
 <212> DNA  
 <213> Pinus taeda

<400> 38  
 gaccgcttgt ataataaagt ggtaccgcgt cctgcaaaca gggttctctt gccatcctgc 60  
 tacaaccctg cagtggctcg agtagagaga atcggagcaa cgaacgtttt cccgaatata 120  
 tggagcggga ggaagagttt tcttgctgat gatccaatcg gagtcgaact gccaccgctg 180  
 gatgaagggc ggcgaggaaa tcttgggggg cagaggcccg tcggcgtagg aaataagaaa 240  
 cgatttgata tggaacgaaa gggcccgtcc agggttcgat ccccggcagg gcagccagcc 300  
 ccgaactaaa caaaacaata agaacaaca gcaaagtaaa agaaagcacc agaagaaaca 360  
 gcagcagacg aagagtaagg agctgcccac aagcggtc 398

<210> 39  
 <211> 179  
 <212> DNA  
 <213> Pinus taeda

<400> 39  
 gaccgcttgt aatccacagc attttcaata acttcctgag gtgacatcca cctccactca 60  
 gaaaactcgg ctgcatctgt cccatcacca gctagattga tctcactctc gtctcctcta 120  
 aatttttagga ggaaccattt ctgtgcttga cctttccatt cgctcccca caagcggtc 179

```
<400> 43
gggtgcgatcc acaatagttc gtacgagcga cgtctatctg gttaatcaga acacatatct 60
aatttgga aa tttgtgggca taaagctcca cagtgtaggt gggctaatacc, catgaaacat 120
tactcttcaa aacatcatac aactgaggtg gaaattgcaa aagattatta ctggatgctg 180
atctgggact aaggtggtgg ccattggtaa tgttggtgtt cagaaatata tcttcatgat 240
gatcagtagt tgcactctgg tggagaagt ataaattctg gtaattttgtc ttgggatcgc 300
acc 303
```

<210> 44  
 <211> 274  
 <212> DNA  
 <213> Pinus taeda

<400> 44  
 ggtgcgatcc aactagaaga atataaagaa aaattacgga ctaccagaaa acatcacatc 60  
 acagtgtatt gcatttctcaa taatcagaac tgtactggct aatatcgctg tgctgtcgt 120  
 ttcattttcc tgtcatccgc atagggcccc tcattttccc tatcttgcag aaatccaaga 180  
 aatgcaagaa aaccaaaaag gaagaaaccc ccagaggaag agtccgaaga ggatatgggt 240  
 gtcagtcttt ttgactagat tggaggatcg cacc 274

<210> 45  
 <211> 269  
 <212> DNA  
 <213> Pinus taeda

<400> 45  
 ggtgcgatcc cagaacattt cagacagatt aaaacaagat ctagtcaatt cctacaaggg 60  
 aaacttttgt caagatccgg atccagattt tcctcaagta aaactaatct cattaaatcc 120  
 aagccaatct ctagcaaaaat tcaaacactt ttatttaaata ccaagccata tatctggcaa 180  
 attcaccgaa atatgtacaa tcgcagcgca ttgcttggct tgcgacagaa accatattcg 240  
 cacgtcttca taaggctttg gatcgccacc 269

<210> 46  
 <211> 240  
 <212> DNA  
 <213> Pinus taeda

<400> 46  
 ggtgcgatcc aacaacacag cttcacactt actccatcct ctggaactct catcagattg 60  
 tggttcttcgt agaccaagtt cctgtgagag tccacaggca cactgaggct acaagcgatg 120  
 tggtccctaa agaacagggg atgtacatgt ttccagcat ttggaatgca gacgactggg 180  
 caaccagggg tgggcttggg aagacaaact ggactgccgc tccattcagc ggatcgccacc 240

<210> 47  
 <211> 242  
 <212> DNA  
 <213> Pinus taeda

<400> 47  
 ggtgcgatcc caacaccaag tgagaatgaa gcaatataaa tcagcagact cactaaagcc 60  
 aaaacagtga aaaatgtttc atattgggaa tctgctccag aatgagcctt caagtaaaat 120  
 gacaaactaa cgaggaagag acatacggcc atgccccag atgagaccat gaggaggaga 180  
 cgtcgtccgg ctttatccat gagccatata gcaactgcag tcatgatgac ctggatcgca 240  
 cc 242

<210> 48  
 <211> 213  
 <212> DNA  
 <213> Pinus taeda

<400> 48  
 ggtgcgatcc aggaaatcat caaaggggag cacatccaat gtgcaaaata agatcatcat 60

```
gcagcaagat ctctgaaata taagctctgt aagaccaatc tgaagtgctg atgatcaata 120
tgaactgaaa catcatgccca caatgggctg gtacttgtgc aaaattctct ggcatgtgat 180
gagaatcaca tggttacctc tttggatcgc acc 213
```

```
<210> 49
<211> 235
<212> DNA
<213> Pinus taeda
```

```
<400> 49
ggtgcatcc aaagagcctt cttgcagaca atccgtgaaa acatggctat acaataaatt 60
cccagtttgg aattctaaat aaaactgttc aatatttgaa ggctctgat atcacagaga 120
ctgatattag aatggaagca tgtagcaacc ctagaagctt tcgcataaag ataccagatt 180
aattcataag aaggatctct cgttcaccag tcacatatca cagtcggatc gcacc 235
```

```
<210> 50
<211> 216
<212> DNA
<213> Pinus taeda
```

```
<400> 50
ggtgcatcc gttagatgag ctgccaaagta tggaattatt gacatttttg gacggggttat 60
gggcagaggg atgtgccaag ctgaagaaga taccgggggt ggagcaagcc acaaaaacttc 120
gagagttaga tgttagtggg tgccctcagt tagatgagct gccaaagtatg gaattattga 180
catctttgga cggcttgtgg gcaaagggat cgcacc 216
```

```
<210> 51
<211> 462
<212> DNA
<213> Pinus taeda
```

```
<400> 51
ggtgcatcc acatagtttg aatgcaagga aattgcacat acttcgtggg gaatttcgat 60
ggcaaatcag tccaggtaaa tgacttctca acatagggtcc aaaactcttt catagaccag 120
atcttgaccg tgttgtccat gccacagctt gcaatacgat atacatctga aggatgaaaa 180
tctacactga gaacttcatt gcgatgtccc ccagctccag caaatatcaa aatgcatatt 240
ccagtttgaa cattccagag tcgtacagat tcatctttgc tagcagataa aataagggaa 300
ggtttcagtt gcttgggtcc ttatttcatt cacagaactc catggccaac gaaactctta 360
tggaactttc atttgcacat ccattctcga attatacatt gtgaccgcag ccactaataa 420
tggggaacat cactcgctg cccacttatg tgtaaagaa tc 462
```

```
<210> 52
<211> 246
<212> DNA
<213> Pinus taeda
```

```
<400> 52
ggtgcatcc cctccattta ccatgggtata ctgttccaaa ggttccagag cctagctctt 60
tcaattcttc aaggtcagca ttctttatta tctggaaact tcgctagctg tgtctataat 120
cacgaaaccc agacggggaa ctaataggcg atgaagtttc tcttatccat aaccgttgca 180
aagatcttac acggagtttt ctcttcttct gcgtggcttt tctttcccgt attctcggat 240
cgcacc 246
```

<210> 53  
 <211> 527  
 <212> DNA  
 <213> Pinus taeda

<400> 53  
 ggtgcgatcc atacatgcga gggcgcatga gagactacca caaatcctac atacctccat 60  
 tcacccctgg atcgggtata caaggatttg gggtaggctaa agtgatactc tcaaatcacc 120  
 cagacttcag agaggggtgac tttgtatctg gtactatagg atgggaagag tacagcataa 180  
 taccaaaaagg gagtaactta agaaagatca aatatacgga cgtaccactt tcatattttg 240  
 tgggtgtttt aagaatgccc gggtttactg cttatgctgg attctttgaa gtttgctctc 300  
 ctaaaaaggg ggagcatggt tttgtctctg ccgcttcagg agctgttggc cagcttggtg 360  
 ggcactttgc aaagttgatg ggttgctatg ttgttaggga gcgcgggtaa caaacagaag 420  
 gctgatctgc tgaaacataa aatgggcttt gatgatgac tccaccataa cgaggagcat 480  
 gacttcgatg tggctttaaa aaggcatttt ccagatggga ttgcacc 527

<210> 54  
 <211> 273  
 <212> DNA  
 <213> Pinus taeda

<400> 54  
 ggtgcgatcg aactgaatga atgacgttgc caagctatgt ttgggaatta aaacttgaat 60  
 gccgttattc tctccttttt ccaaaagggc cttttctgcc agaaaacctt aaatttctga 120  
 ctggtttcca agtccaattt ttaaaatatg gattgggtta ccattgaagg caccaccatg 180  
 ctctgaaagt tatggactgc acttgcccca gtgctatatt tagtccagat agcgcttgtg 240  
 tctctaaatg catctccctg ctcggatatc acc 273

<210> 55  
 <211> 220  
 <212> DNA  
 <213> Pinus taeda

<400> 55  
 ggtgcgatcc gaacagaggg agcagatttt gcccttgcaa gtattcacaa cattagagaa 60  
 gccctgccag agatatggga ggaagaagat gcagagaaca ccaaaaatgt tgtgggatca 120  
 agaggagcgg atgcaactat agaaactgtt gtcacggcat aagccatcgc ctcatatgaat 180  
 gagggaatgg aggactagac aaatcccttt ggatcgcacc 220

<210> 56  
 <211> 483  
 <212> DNA  
 <213> Pinus taeda

<400> 56  
 ggtgcgatcc gattgggagc ctgcagcctt gggaagcttt agaatcaa atgcactcatc 60  
 ctccaggagg tattgagaag tcaatttctc aaggtctaca gtgacagaag gaaccatctt 120  
 gacaatctta tcaggtttcc tgctctggtt aaacacttca actttgacag gacgagagaa 180  
 tgtgactaat tcatcttctt catcagactc tacatcttcc tgtttcaaga aacaaagata 240  
 ctgatcatca ctagggcaag aattgatgat tttgatatct ctggagaagc cagtgtttac 300  
 attggtttgc ttcattggcca ccagtctatg gcataaagct ttcccgaag ggtacttggc 360  
 agatttaaca gagcccaacg ttatatattaa ggcccatctc tttgctctca aaatttttct 420  
 tgcacacctt ggagaatata aaacccttg gtgtctcttt ccacaaacac cttctcattg 480  
 atc 483

<210> 57  
 <211> 472  
 <212> DNA  
 <213> Pinus taeda

<400> 57  
 ggtgcatcc aactgagaag ggtgtttggt ggaaagatga caccaagtgg gttctatatt 60  
 ctccagagga tgcaagaaaa attttgagag aaagaagatg ggcccttaaa tataacgtgg 120  
 ggttctgtta aatctgccaa gtacccttca ggaaagtta tgccatagac ttggtggcca 180  
 tgaagcaaac caatgtaaac actgggttctc cagagatata aaaatcatca attcttgccc 240  
 tagtgatgat caggaagatg tagagtctga tgaagaagat gaattagtca cattctctcg 300  
 tcctgtcaaa gttgaagtgc ttaaccagag caggaaacct gataagattg tcaagatggg 360  
 tccttctgtc actgtagacc ttgagaaatt gacttctcaa tacctcctgg aggatgagtg 420  
 caatttgatt ctaaagcttc ccaaggctgc agctgccccaa tcggatcgca cc 472

<210> 58  
 <211> 246  
 <212> DNA  
 <213> Pinus taeda

<400> 58  
 ggtgcatcc atgtagtgcc aacttacgag atcactaact ttaaaactat catgcaattg 60  
 gccaatagaa gcgacacttg ctgtgccaaa gtatcgatag gctactcccg atgggtcaat 120  
 catatatagt tggggcccat ctctatcata acctccaagg ataactccag atccaaaagg 180  
 ccttaaccac caatatagtg tgcacaaatg cacataactg gcaacacgtt cacaagttc 240  
 cttaat 246

<210> 59  
 <211> 255  
 <212> DNA  
 <213> Pinus taeda

<400> 59  
 ggtgcatcc catgggatag ttgcaagaca cacaattttg ttgtgaaaga agagagacac 60  
 gcacagacaa ccatatgatc tttttttttt tttttttttt tttttttttt ttttttttag 120  
 caaaattcaa acacttttta ttaaattccaa gccatatatc tggcaaattc accgaaatat 180  
 gtacaatcgc agcgcatcgc ttggcttgcg acagaaacca tattcgcacg tcttcataag 240  
 gctttggatc gcacc 255

<210> 60  
 <211> 368  
 <212> DNA  
 <213> Pinus taeda

<400> 60  
 ggtgcatcc cactgtagtt gtccttggtg agcatagttc aagctgttct gattccacca 60  
 gttagtggcc caacactgcy aggtgctgcc atttccattc cattcacaga cgtcagtgtt 120  
 gaaattcata taggaagcca caaagggtga ggaagaccaa tctatattca ctgcccccc 180  
 ttgagttgcc cactggtctc cgctccatat gctagagaat actctcattg cctgctcatt 240  
 cggataggga acgcctatgt tttcattgtt tgcaaatact ctgattggca aaccatcaac 300  
 gaaaatcgca atttgctggg ggttccagag aatagagtaa ttgtggaaat ctgctgtagg 360  
 atcgacc 368

<210> 61  
 <211> 354  
 <212> DNA  
 <213> Pinus taeda

<400> 61  
 ggtgcatcc cacactccta accctattat atgtctcccg tccatggagt catagaagga 60  
 gtacgataat atgcccttca gccaaagcgaa gtatgacttt agtatggcca ggcagcagta 120  
 tgaaagcaca tcttgtttct tccagggtcgg catgtatagt ctccggaggc taacaatgtc 180  
 acccaaagct aattgcgcaa acggaactcc tctgctgac tcccgggaac ttaggcggaa 240  
 ccaccctgaa tccactattc tcaccgcgca tttcatccct ttggtgaacg ccgctgcctc 300  
 tggtagatac agagctggct tgtctccact ggaacccccct ttccggatcg cacc 354

<210> 62  
 <211> 364  
 <212> DNA  
 <213> Pinus taeda

<400> 62  
 ggtgcatcc aaactgtggt tatcggtgga gagattaagc aatttattgg agtagcaagt 60  
 acgctgaatt aaggggggtcc atcttcaagc aaagggttct ttggatgact atgtgttctg 120  
 gaagtgttta tggatcaatc atctcataaa ttttggtaat atataacaga agattatggc 180  
 atccagttag gatggtagtt tcattgaggt atagtaaaaa ctacactagt cttgtgttgc 240  
 caccacttt tcagagaagt caggaggtct ctttgtgaat cattgataac tttatgagtg 300  
 ggtacctaata tgaaatatat gcattcttgag tatataactca attgatctta cttgtggatc 360  
 gcac 364

<210> 63  
 <211> 381  
 <212> DNA  
 <213> Pinus taeda

<400> 63  
 cttggtaccg agctcggatc cactagtaac ggccgccagt gtgctggaat ttacggctgc 60  
 gagaagacga cagaacacct atcataactt gaattctgat gcaaatacga atttgccaaa 120  
 aacttggaagc gaaatataat aggcaatata atccccgcaa gtaacaaaaa aattgcatga 180  
 aagctcaaat cctatgtgct ttacaccttg actgcatact ttctcattgg aaaatacatc 240  
 tctttctttt tctgtctctc agtcttcaat gacgcctgat gcttggttaag gcgtcgcctg 300  
 atagcacgag tcttcttggg acgcaaatac agaggcaggt acttcttttt tttgtatgct 360  
 tctcttaatg cggatcgcac c 381

<210> 64  
 <211> 382  
 <212> DNA  
 <213> Pinus taeda

<400> 64  
 ggtgcatcc aagattgtac ggcacaggca aatgctgttc tttttcttaa tcacgatgtg 60  
 cttgaagaat atgagcgccg atgtgaacag atccacaacc tggagttaaa attggaggaa 120  
 gacagagcag tgctgaatag gagcttggca gaaataaata gtcttaagga atcctggctt 180  
 cccacattga ggagtttggt taccagaatt aatgaaactt tcagccacaa ctttcaaggg 240  
 atggctgttg ctggagaagt tacactagat gaacatggca tggattttga caagttatgg 300  
 tattctaata aaagtcaagt tcaggcaaac tggacagttg caggatttga attgctcatc 360  
 atcagtctgg agggatcgca cc 382

<210> 65  
 <211> 367  
 <212> DNA  
 <213> Pinus taeda

<400> 65  
 ggtgcatcc gaggaagcg atgtagtctt gcccgaagcg acgaccatga tcccttattc 60  
 ttgggcaata tgtgcaagac gtggacaaat gaagcgggta aagggaagct tatggactat 120  
 ggaatagagg gtcttgaaga gctaactcta gtgggtgata ctcaaatga aggaataagc 180  
 cgtgggttttg catttatagc attttctacg cacatggatg cgatgaatgc atacaaacgc 240  
 cttcagaggc cagatgttat ttttggtgct gatcgaactg cgaatgtggc atttgcagag 300  
 ccactgcgtg agcctgacga agagatcatg gccaggtta agtcagtgtt gttgatggga 360  
 tcgcacc 367

<210> 66  
 <211> 298  
 <212> DNA  
 <213> Pinus taeda

<400> 66  
 ggtgcatcc agtcctgaaa atgtacttta ccatttgtat aatgatgtaa aaatcttggc 60  
 catagtctgg tcaaaccaga ctgtattgtt gctaaagtta tggaaattct ggccatattt 120  
 ttgtctaacc agactgtatt gttgccaaag ttatgggaat tccggctata tttttgtctt 180  
 cgaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa tcataggggt gtctgtgcgt 240  
 gtctctcttc ttacacaaca aatttgtgtg ttttgcaact atcccatggg atcgacc 298

<210> 67  
 <211> 425  
 <212> DNA  
 <213> Pinus taeda

<400> 67  
 ggtgcatcc gctggaaggt gggcagctgg acatctggga attataagtc gaatgtcaat 60  
 tgctgggcca tctgggggat gagcaatagc atcggaggcc aagttcttct gcagccgggc 120  
 accaaatgcc atgtggaggt ctgaatctta gtttggaggt cgaagtcca atccccttgt 180  
 gtttactctg tttctgggtt tatttgaata atttgagcaa tttaatgtgg gtccttagtg 240  
 cttctgtgga tcagattcta gggaaacgcca tcctgataag taaagatccg agttttaatg 300  
 gagattcaat tctatcagaa ttccatggtg gtttaaatc ccttgtactg ttgatctacg 360  
 tcgcttttga tatcagtgtg tgtaagatt ttctcagaat ccacagcttt gttatggatc 420  
 gcacc 425

<210> 68  
 <211> 335  
 <212> DNA  
 <213> Pinus taeda

<400> 68  
 ggtgcatcc aagcacttac gactcccaac aaggacggga aactctaaaa tcggaaaaat 60  
 atcatatact gaggcataa ctttgttgat aaaactttaa acaagaacaa tatttgcagc 120  
 atattagccc acatgccata atgacaaaca aatatgagaa cactgcctac aggtttgcca 180  
 aaagcatggc ctcactttt gccctgaggt catcaggagc ttctgaggct cgagaaggag 240  
 aaaaagattg tgtaacttca ggagctgagg cctccacatc ttttaaatgat ttcgcagcag 300  
 gcctctcttt aatgttttct ttagaggatc gcacc 335

<210> 69  
 <211> 711  
 <212> DNA  
 <213> Pinus taeda

<400> 69  
 ggtgcatcc aaggtacgag cgaacaagtt tcttcagcaa gccacctgga actttccatg 60  
 agtccaaaac aagttgaaga aggcttcttt ggctactttt aagatgctga agtgattgtg 120  
 ctgcctctt gcacagttca accgcaataa cattgggttt tacaaaaccg attacctgtt 180  
 taacctgctg tgcactcttt ttcgaaacat gacaagttcc aacaagataa acttcggccc 240  
 cattctcgcc attccgcaaa taaaccacgc tctcatcttc tgttatcgaa ctcgagtgca 300  
 tgccacgacg ctcaattgca ggattccaac cccggacttg cgaatgggtg aaagcgatgc 360  
 ccgttcgtct cagcgatact gctaaagatc ggcagaccgc aaccagtttg atgcttccat 420  
 tgccttaaac atccagagtt ttccttcgac cttaaaccct aacaagatta ctgatttctg 480  
 gtccggatgt tcaactgtctg ttatacttct cacaaatctg tcacactcct gataatcttc 540  
 ggtattgaac ttcattgaat tgaattttcc ttctcattgg aattcaattg taccttgtaa 600  
 atgtctggat cctacactat accaatatctt acaggtctga gtattttgcc tgtagtataa 660  
 ttatctttcc ttcggtctcg tgtttccgta ttattcgtgt aggatcgcac c 711

<210> 70  
 <211> 622  
 <212> DNA  
 <213> Pinus taeda

<400> 70  
 ggtgcatcc cgggggggagg ttgatgttct gagagaatca atgaagggat ttcagctgag 60  
 cttgcctttt tgaagacgga atgcgaacaa ccagtcattt gcaatagcga gaattctctt 120  
 aagccactgc ctgctgggga ggcgagttct gattccgggtg attgcatcac tcaacggcag 180  
 cagcagcggc agaaccttta gtttcccatg acaggtctct ctgtacaagt atcttcctgt 240  
 tatgatctaa ttccgggttg ttcgattatc gtgatgtctc ctgtattgac atattagcag 300  
 aatattacca tgatacgatg ttaagtggca tggtttatgc cctgcatgtt atgttatgga 360  
 ggaggtgagg catgtggcgc tcatgggagg gccacatgg tccatggacg tcttattaaa 420  
 cgcatagtcg tgaatgaaaa tagttcaata cattcaaaat tccaacacaa tttcattaca 480  
 atggaagtga cttcgacttg aatgttcatt gaagcatttg catgcacaaa caaagtatac 540  
 tagattagaa gaaaattgca aaaaaggaca ttgtgccctt cttagtgaat atataaagat 600  
 gttcttcatg ctggatcgca cc 622

<210> 71  
 <211> 471  
 <212> DNA  
 <213> Pinus taeda

<400> 71  
 ggtgcatcc caatagccaa tattgcctcc aagatagcct agactgcctt ttgcatagtt 60  
 ctagaagcca gtcacccaac ctcccaaaag aaattgcgca atctttccca tcagtttccc 120  
 gggatatgtg tctgtcattc cccgaatttt ctttggtttt cactaataga tttctttcca 180  
 tgcacattgc ttgtctccag atcttttagg tgttcatcca tctcttagta gtactagatc 240  
 gatggcttcc aagagaacag gatcatatga cactgttgga aatgtagctg gagcagcagt 300  
 tgagcaagtg tcctctagtc tatctatcta tgaaagatac acattgtttc tagacatgga 360  
 tatcaaattg aaattgccag aagtccatga aacatttgcc gccttttgaa gaaaggctcc 420  
 aaactgtcag ggttcgttga acatcacatg ttctcgctgt ctgatccccc c 471

<210> 72  
 <211> 418

<212> DNA  
<213> Pinus taeda

<400> 72

```
ggtgcgatcc tcagggtaat ggccctggctg aatcaagtaa caagaatctt ataaccatta 60
tctaagaaga tagtaggaga taacaagcgg tcttgggaca acaaaatcaa gtgcgctttg 120
tgggcagata ggataactaa aaagaaagcc actggtaaaa gtccctttga acttgtctat 180
ggcatggatt tgacattaca tgcccatctt aaattactag cttaccaact cttcaacat 240
ttttctagtg ataaagggtg tgtccaaaac atgggttgatc aaattgtgca gttggatgaa 300
atccgcagga aagattttga tagtgcaaaa atcagtctac cattaagaaa atctttgaca 360
aatcttctcg gtctagatat ttacagggtg gagatatggt tttactatgg attccacc 418
```

<210> 73  
<211> 416  
<212> DNA  
<213> Pinus taeda

<400> 73

```
ggtgcgatcc tgcaggctta gatagtttcg gcgctcctct gaaagaagca cgagtaggtg 60
tctccacatt aggttggcct gatcccttgc ctgcacttgc agcttgtctt acaacatctc 120
ctatgctttg atccaggctt ttcactgaca taacttcagg ggcttccttc tcccaggggc 180
gtgctgccat ccagcgttct agccagctcc atccccaatt tggcttggtt gggtaaat 240
ccatcagcat aggatgagct gctcctcgtg tgcttttcaa tgactgatga gaatatgcgt 300
tatgccaatg ccctttctcg cttcatggct gcttcttgct tgctttgcaa actagcctca 360
atttcctctt tggattgcaa ctgtcatcca atcctttgct tccatactgg atccac 416
```

<210> 74  
<211> 346  
<212> DNA  
<213> Pinus taeda

<400> 74

```
ggtgcgatcc caaatgaaca ttcaacattc gatcatgtca agcgctaaat gccttggcag 60
cttaaaagct agactccgca agtgaccctt ctgacttagt acacatatta agactcatca 120
agggtccaat tccatgaaaa gaaattttta aacggttaca tattcacaag aacagcacga 180
gatttcccag atagtcaacc accaacttgc cctatcagcc caaatattac tcattccatg 240
ttaaaaatag caaatttcca gatagaatgt cgaaagagat cttcatgcac catatatgga 300
ctcttaaaac cagccaaaat ctatactgcc atgcttggat cgcacc 346
```

<210> 75  
<211> 346  
<212> DNA  
<213> Pinus taeda

<400> 75

```
ggtgcgatcc tggagagaga agcaaaaagc ctaccatcta aatctacatt ctaaatacaga 60
tatctttact gtgaaaggaa ttgaatgctg cttcagatat cctacaagaa ttaagaagaa 120
aagaatgatc aactccaaat caggcagatg gctcagaatt tccgcagct tcattttcga 180
cggcctccac aacaccaacc tcggcaggac gtattactct gccatgaagt gtatagccag 240
gcttcaaaac cacagccaca ctgccaggct gcttactagc atcttgaact tgagatactg 300
ccatgttgca tatgaggatc aaactcttca tttattggat cgcacc 346
```

<210> 76  
<211> 286

<212> DNA  
<213> Pinus taeda

<400> 76

```

ggtgcatcc ccagagggtta ttttgggttc aaagtattct acaccagttg acatgtggtc 60
atttgcttgc ataatttttg aactggctac aggtgatatg ttatttgatc ctcagagtgc 120
agaaggttat gaccgcatg aggaccacct tgccctgatg atggagcttc ttggaaaaat 180
acctcgtaag atcgcccttag gtgggagcta ttcacgggaa ctttttgaca ggcatgggga 240
tttaaagcac attagacggc ttcggtattg gcccttggat cgcacc 286

```

<210> 77  
<211> 395  
<212> DNA  
<213> Pinus taeda

<400> 77

```

ggtgcatcc taaactgtat gtctccacaa ttgtcttcaa tatagaagca gctacgcccc 60
tcctaagtca tcataagtta aaaacttcat ctttccaata caattaaact atctagctta 120
tcagtttgga atagagatac aaaattacag atagattagc gaaactgtgc cacaaaacct 180
cttcaaaatt agaagcatga ttgtctacaa ctccacttca aaaaggagct gaaccagtcc 240
ttcgaagggt gtgctttggg tgtgggtggag gtacagaagg cagcaatttc tccaagaact 300
gctgtttttt tagcctctca ttctcctctt taagctgcat cacttcattc tctagctcat 360
ttgtgtatgc ctgctttctt gccctggatc gcacc 395

```

<210> 78  
<211> 308  
<212> DNA  
<213> Pinus taeda

<400> 78

```

ggtgcatcc gagtgatggc acaaagaaaa gcaatgatag aaaacaaaga acaggtagct 60
cagaagggtc agcaacttag agagtcaact tcgagttaag gagggcggga gcaattggca 120
gattcttcca aatttgtcaa gatctcttgg catgagatga ccttatagga tgttaaggag 180
caagaggatt ctaggaataa tgccaaggat aataagacta aaaggatgct tcaagaccag 240
gtggcaagga aggcttctaa ttcaaaggga gttagcaacg gcaacagatg caattctagg 300
atcgacc 308

```

<210> 79  
<211> 307  
<212> DNA  
<213> Pinus taeda

<400> 79

```

ggtgcatcc tagaattgca tctgttgccg ttgctactcc ctttgaatta gaagccttcc 60
ttgccacctg gtcttgaagc atccttttag tcttattatc cttggcatta ttcttagaat 120
cctcttgctc cttaacatcc tataagggtca tctcatgcc aagatcttg acaaatttgg 180
aagaatctgc caattgctcc cgccctcctt aactcgaagt tgactctcta agttgctgaa 240
ccttctgagc tacctgttct ttgttttcta tcattgcttt tctttgtgcc atcactcgga 300
tcgcacc 307

```

<210> 80  
<211> 521  
<212> DNA  
<213> Pinus taeda

<220>  
 <221> modified\_base  
 <222> (391)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (428)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (433)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (443)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (471)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (494)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (497)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (512)  
 <223> a, t, c, g, other or unknown

<400> 80  
 atctagatca tcgatcttgt ccaaatttta actagtgaat agtttttaaaa aaaagcaact 60  
 agcagaagag aacctaacca ctgacaaatt gcaaatactc tagaacacta ttcattcattt 120  
 tttgcgattc acgctggacc cacaagaacc ccttgagctg aacttttcttt tcgttctccc 180  
 tccttttggg tgcgaccatc tagaccatcg atcttgtcca aatttttaact agtgaatagt 240  
 ttttaaaaaa agcaactagc agaagagAAC taaccactga caaattgcaa atactctaga 300  
 acactattca tcattttttg cgattcacgc tggaccacaa gaactcttga gctgaatttc 360  
 ttttcgtctc ctctttttgg attggacatc naatcctgca gccggggatt catattctta 420  
 acggcgcneg cgnngactcc atnccccata tgatcttttc atcctggcgc ntttaactct 480  
 gaagggaac cgnnttnccc ttatccctgg anatcccttc c 521

<210> 81  
 <211> 163  
 <212> DNA  
 <213> Pinus taeda

<400> 81

gtggagtgtgta aaggtcaacg tgccatccgg gtacaaacta ttgtagaaaa aatggcaaag 60  
ttaggtctga aaatatccat ttggcctgct ctagttgtac agtacatgat tttgcactcg 120  
cacaacaatg gactataatt attttctctgg caaaaaaaaaaaa aaa 163

<210> 82

<211> 486

<212> DNA

<213> Pinus taeda

<220>

<221> modified\_base

<222> (330)

<223> a, t, c, g, other or unknown

<220>

<221> modified\_base

<222> (349)

<223> a, t, c, g, other or unknown

<220>

<221> modified\_base

<222> (364)

<223> a, t, c, g, other or unknown

<220>

<221> modified\_base

<222> (368)

<223> a, t, c, g, other or unknown

<220>

<221> modified\_base

<222> (411)

<223> a, t, c, g, other or unknown

<220>

<221> modified\_base

<222> (431)

<223> a, t, c, g, other or unknown

<220>

<221> modified\_base

<222> (447)

<223> a, t, c, g, other or unknown

<220>

<221> modified\_base

<222> (461)

<223> a, t, c, g, other or unknown

<220>

<221> modified\_base

<222> (476)

<223> a, t, c, g, other or unknown

<220>

<221> modified\_base

<222> (478)

<223> a, t, c, g, other or unknown

<220>

<221> modified\_base

<222> (480)

<223> a, t, c, g, other or unknown

<400> 82

```

ggtgcatcc aggacatgag gccgagtttg ccattgtgat atgattgagg aagtccagtc 60
ctaaaattag gtttatcttg atgtttgaca agagatatag aggggcatga tgattcattg 120
atctgtttgc agatctgtaa ctgcaaccat tctaatagaca taatagcgct attgtttggg 180
ttcgtgtgat gacataataa attgatttaa tttaataaca tctgttaatg caatggctgt 240
agctgcatca tcaccgtatc catcgaatgt tccatttttc caaatgtttg tttccaaaac 300
cagaacacca aaatgtcccc tgcgtttgtn ttgaaaaata ttgggcccnt actatactat 360
aatntttngg catactatac tataatgttt ctcccattcc ccccaaata ntcctataca 420
atcctggccg nctttacact cctgacngga aaccgggctt nccactaatc cctggncnan 480
cccttc                                         486

```

<210> 83

<211> 144

<212> DNA

<213> Pinus taeda

<400> 83

```

ggtgcatcc gactgtgata tgtgactggg gaacgagaga tccttcttat gaattaatct 60
ggtatcttta tgcgaaagct tttaggggtg ctacatgctc tcctcttttg tatgaatttc 120
cattctaata tcagtctctg tgat                                         144

```

<210> 84

<211> 525

<212> DNA

<213> Pinus taeda

<400> 84

```

ggggagtgtc aagggaataag tggtaagcca ggtttccagt cagaagtgtg aaggcggcca 60
gtgatgtaat agattcatat aggggaatgg agtcaccggg gtgcgccgtt ttagaatagt 120
ggatccccgg ctgcaggatt tgatgggtgcg atcctgcccc tgataatttg gttgcaatgg 180
aaaatgcagt attaggtgcg agatgtaaag cccgccccga gcggtgcatg aagtactgca 240
atatttggtg tagtaaatgt gctgggttggtg ttcccagcgg tcactatggc aacaaggacg 300
agtgcacctg ctacagagat atgaagtccg cagccggcaa gcccaagtgt ccctgatctt 360
agcacttcag tccagtcgct cacttctttt attctttttt tttataaaag tgacgaggcc 420
gtttttcttg tacttggtgg ccatatgtag agcgggtggct acttctcctg tgttaggaaa 480
tgttgcagta ctaataataa gaacttcttt ggcaaaaaaa aaaaaa                    525

```

<210> 85

<211> 543

<212> DNA

<213> Pinus taeda

<400> 85

```

gggtttcctt aagagttaaa ggcgcatgat gtatagaatc atatagggga tggattcccc 60
ccggggggcc tttcagaata gggattcccc gctgcaggat tgatagtgcg atccaagaca 120
cagtggagta ccacaatggg gatctggcca gtgctttgtg gctattcact gcagctgtat 180
taaaacagga agccgcaaat ggccagaagg ccattgaact tgctgagagc agactatcta 240

```

```
<210> 86
<211> 370
<212> DNA
<213> Pinus taeda
```

```
<210> 87
<211> 237
<212> DNA
<213> Pinus taeda
```

```
<210> 88
<211> 476
<212> DNA
<213> Pinus taeda
```

```
<220>  
<221> modified_base  
<222> (394)  
<223> a, t, c, g, other or unknown
```

```
<220>
<221> modified_base
<222> (403)..(404)
```



&lt;400&gt; 88

```

ggtgcatct gtgtggctct gaaacatccc ggctcccctc tgcactataa taatcccaaa 60
attaagtga cccaacagaa tttgctcata tctctacagt tattgcagac tgagcaaaac 120
cctcaaactc atgtgacctc tcaataggag cccacgcccc agatttgtcc agcatgtaac 180
acacctgatc gccgccactg caagcacaac cgctcacaaa tatcttgtca caccacactg 240
ttgcgcaagt taacaatatt catgtctcca ggaaagaaat gccacacttc ccaacattct 300
ctttactatt atagaacttc cttgttgcta tggaaaaaat acattcccaa cgcagaaccc 360
caacgggggt tccaatancc ccatttcccc cctntccaan ccnntntgaa tgcnccccat 420
nccctattgn atnntttaaa tccngggcgn ttanctggaa ggnaaccgcn ttcccn 476

```

&lt;210&gt; 89

&lt;211&gt; 364

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 89

```

gttttcccag tcaggacgtg taaaacgacg gccagggatt gtaatacgat tcactatagg 60
cgaattggag gtcgatccgt ataggtagtt ggatgatgaa cgggcaaaga aggcaaagga 120
gtacagtgat ggatcctgta attcctgttt cagaaaacag aaaatctgca atataaggat 180
ggctaagctt ttcagctatg aaaatatatg gtgcagtggc actcatatca gttgcagagt 240
tgtcaatata acttttgtga ataggaaagt tgcctcttt tagagtgcag aaatcctgca 300
atataaggat ggctaagttt ttcagctata tgaaaatata tgggtgcagt gcaaaaaaaaa 360
aaaa 364

```

&lt;210&gt; 90

&lt;211&gt; 170

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 90

```

ggtgcatcc tacagagagc agcttgacga gggccaaaag gttaaggatg aagaatgacc 60
tcagctagta aggtttacag aagcagcaga ggcattctaa ctgtttttat gttttggcaa 120
aagttgttgc gtcggttggt taatccagga tttcagatgt attttgtaga 170

```

&lt;210&gt; 91

&lt;211&gt; 210

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 91

```

attgtaatac gactcactat agggcgaatt ggaggggtccg atcctgagag accgaggggt 60
cattttcctt tagacaacga cgttcagtgg cgaccagagt ttcccaatca cttcagcgat 120
tctattcctt cgttgtaata aagcttaagg aatccatgct ttattccttg gaaggtttga 180
atatttatat ttattggcaa aaaaaaaaaa 210

```

&lt;210&gt; 92

&lt;211&gt; 237

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 92

```

agggtgaccgt caaaatgatt gcagaggact tagagaggga aaaccgttcc gatctggtga 60
agcaattgga tgaagcagct ctggaattga ttcccgtttc tgatgatatc gtacgggctaa 120
gctcagctct tcaggcaatt ggcagagaat acgattcttc aaatgagatg acagatttta 180

```

agaaacttat agatgaacat atttccaagc ttgaagcgga ttcccctacg gtcacct 237

<210> 93  
<211> 525  
<212> DNA  
<213> Pinus taeda

<400> 93  
aggtgaccgt aaaatactat gagaaatgct ttcatacaggc accgctggta ggttttcttc 60  
aagcttttca ttaggcaaaa gaggtccgt gagttgatcg ttaattctct ccttgaatgg 120  
ccatattgac cagacactct gattagaaac tggaatacaa ctgcacatat agtcattctt 180  
atatgattca tccttctgca cttcagcatc ctgcggcaac tcttcacccc gccatactgc 240  
agaaaaatta tttgactctt gatcatgttg tagatgaatc ttcatagaatc ttctcatctt 300  
gcattcttgt ctttatatct ttaggaaatt gcactctggta aaagtataaa tgcactcttca 360  
ctgggttgctt cagtttttgc atgctcctgt tcttcttggt tacatgtgat ctaccaaattc 420  
atctaattgta ttctctcaat gtcttgtgga cattctcctt cattccgaga ttaccaatca 480  
tctaccgaa taaatgttgc cccgtcagca atgccgtttt ggtcc 525

<210> 94  
<211> 437  
<212> DNA  
<213> Pinus taeda

<400> 94  
aggtgaccgt agtaggcgtc cagaggctga caaaatccca ggctgtgca aatctggaag 60  
ccgcatgcag ggccgtggca ccttacactt gcggccttaa caaagtggcc cgcggcacc 120  
acttctacca gtgtgtttat attcttgtgc agccaacacc agaggttatg caggcgaatg 180  
tgctggccaa gcgttggttc ggcttgtccg caaacctctc cgagtcttac atgccgcata 240  
tgagtcttgt gtatggcgat ttgcctgacg acgagaaaga gaaggccaag gttaaggcgc 300  
agctaaattc gatgaactta tccgcaacac ggaattccaa gtctccagct tgtgcttgta 360  
ctcgacagat ctgaaaataa tcctcactca tgcataagtg caaatgtga tcttaacctg 420  
ctctgaaaat tacataa 437

<210> 95  
<211> 372  
<212> DNA  
<213> Pinus taeda

<400> 95  
aggtgaccgt ccacgagaat ttggcttcaa aaccctagga gagggatatg aacttgccaa 60  
ggcacaactg acgcatgaac aagacgtaaa atgactcatt agacactgac atgataatga 120  
aaaacctatg aatgatgata gactcagcta cttgatgaca tcgcccgcga tttggacatc 180  
tttataagga gtttaagcaa accctagacc tactgcctag tgaccaactt ttgcttgacg 240  
actcactgaa atgacaatat ttgaccttga cacttcaaaa tcacttttgta ggaactcatt 300  
tgatcactgg aggacggctg gaaagactga cactaacagg actttatata tgcacctcgt 360  
ctatccgaac tt 372

<210> 96  
<211> 442  
<212> DNA  
<213> Pinus taeda

<400> 96  
aggtgaccgt aagcacaagt cgtcaaaatt atctctattc cggcagtaaa aacctatagc 60

```

taatgatgga tcaatagcac taagtggcag ctggcgtaga tcaactgcaat gataagaacc 120
agtatcaacc cccatattat caggagatat ctccaccacc tgctgcacta catgtggatc 180
taagtacaga gcctgatcat cctgaacacc aacaatatac gttgaagctc caggctttcc 240
accagcaata ccaagacttt ggggaaatgt gaacgtttca cgaagtgatg gtacatacct 300
tgggttgatc ttctctacac caagaacaag cggcaccaaa atcaggatag gcacttggtc 360
ttccccttct ccattggacc actctgaaca cagcctcgca gcatcatcaa tgcagataac 420
tggagtcctt ccacggtcac ct                                     442

```

```

<210> 97
<211> 381
<212> DNA
<213> Pinus taeda

```

```

<400> 97
agggtgaccgt gaatatggtg ggtatttgca gggcaagatt caggatgctg ctcccggagc 60
ttaagtaagg tcttggaccc taataaattc agggatatat cattatgtat atgctctcat 120
ttagctgctc atctgatttc cattgggtga atcagttggt ttgcagtacg tgggggtctg 180
tttattttgt gagtttatgg tggagttcat tttgttgttg ttgttttttc ttatctaggg 240
tttaggggtt tgccctgtaa tcggtcttcc cctctctcct gcgcttgaat ttgacctgaa 300
acctcttgaa gtaggccttg gttttctggg ctttgacgaa aaccatgggt gtggatctcc 360
tctctctcgc tacggtcacc t                                     381

```

```

<210> 98
<211> 364
<212> DNA
<213> Pinus taeda

```

```

<400> 98
agggtgaccgt cctacttcac cgcagtgact tccatctggt tttaggaaac tatccctaaa 60
tccttcacta gttgacgaat tgattgactc aaatcaactg tcggtcaaac ccactctctc 120
tgaaagtga tttctatgagt ctatacccaa cccaaatcaa taggttgagg taacagttga 180
cccgatttca ccttcaacaa atcatacctt tcccgaagag agtgaacatg attcaacaca 240
agttcttttt ggttcaccag attcaaataga gcttgggggt aatcctcctg ttccatcaag 300
acaagaagaa aatcctccca ctctcgtaac tcaagggtta atcctcccat ttctacggtc 360
acct                                     364

```

```

<210> 99
<211> 274
<212> DNA
<213> Pinus taeda

```

```

<220>
<221> modified_base
<222> (12)
<223> a, t, c, g, other or unknown

```

```

<220>
<221> modified_base
<222> (21)
<223> a, t, c, g, other or unknown

```

```

<220>
<221> modified_base
<222> (29)
<223> a, t, c, g, other or unknown

```

<220>  
 <221> modified\_base  
 <222> (40)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (44)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (48)  
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<213> Pinus taeda

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<212> DNA

<213> Pinus taeda

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atgagggcaa gagtggcaac gctgattcag atgacttgaa tgaaatggaa gtcaaagcta 180
aagcagccga acaactgctt gctgtgcatg gggcagcatt actacagaat gctctgaaag 240
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ctaagccaat tctgcaaatt tccatcactg gcggggcccg ctccaacttc ctctaaaagg 420
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<212> DNA

<213> Pinus taeda

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attacagggc aaggatccgc ctgattaacc aagataagaa caagtacaac acacccttgc 180
caaaaaaaaa aaaaaaa 197

```

&lt;210&gt; 103

&lt;211&gt; 208

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 103

```

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atgaacatcg tattgtggag tggagccact cgtgacctga ttctgtccta agtacttggt 180
cctggaatac aatattgcac ggtcacct 208

```

&lt;210&gt; 104

&lt;211&gt; 511

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 104

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aagttctcaa aaaatatattt atttacaaaa cagggaaaat aaaaaatgac tctatcaact 120
atacaatcct aacatccatc tcccagacaga cctccagtat atgtacaagg cgctgaaaga 180
aggctgatta ttttctattc cagctcgcat aacgtgggtc ttctgaggct ttgcctattc 240
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cagggaaacct tggactccct ttaaaaccta gagctacttt ttacgaaccc ctgcttctct 360
tgaacactta gggaacttat acttacaaaa cttcggggaac tccacccct agctttgcag 420
gactccagca gattccccaa actgccagaa ggcataatttc catgcactgt taggggtgaa 480
ttctactat caaaaccccc aaaacatcat a 511

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&lt;210&gt; 105

&lt;211&gt; 430

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 105

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ctgttcccc 430

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&lt;210&gt; 106

&lt;211&gt; 362

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 106

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ccttgtcttg gttttgtctt ccgtgccttg tccatttgga gagtcttcac agcttctgcc 300
acttcaattt gaattgcagc atccacttgc ggaacgggtct gctccccata tcacggcacc 360
tt

```

&lt;210&gt; 107

&lt;211&gt; 360

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 107

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ctttcagagc attctgtagt aatgctgccc catgcacagc aagcagttgt tcggctgctt 180
tagctttgac ttccatttca ttcaagtcac ctgaatcagt gttgccactc ttgccctcat 240
ccttgtcttg gttttgtctt cgtgccttgc ccatttgagg agtcttcaca gcttctgcca 300
cttcaatttg aattgcagca tccactgcgg acggctctgc tcccatatcc acggtcacct 360

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&lt;210&gt; 108

&lt;211&gt; 370

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 108

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&lt;210&gt; 109

&lt;211&gt; 578

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 109

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 taacctgtca cacctattta ccataatgac aattcttttt ttttaaataat ctccgccaaa 180  
 ggggttaaatac tgggtaagaa cccttctgtt aaccctacta ataccaacat gcacttgtcg 240  
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| ggcaactgtt | ggacaggatg  | attcgttctc | ctgtggacag | gatgattagt | tctcctatcg | 120 |
| aggcatccta | ccaagcagt   | ttgggactca | tgggaagtac | ctctcatctg | atcaatgagt | 180 |
| aggaaatggg | gttagggacc  | attaagtagt | attatcgatg | gatgcattgt | tgtatctatt | 240 |
| gtactcccta | tgctagaatg  | aactccattg | atctgggatc | aatgaatact | gtttctggga | 300 |
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<223> a, t, c, g, other or unknown

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<223> a, t, c, g, other or unknown

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<223> a, t, c, g, other or unknown

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<223> a, t, c, g, other or unknown
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 gagaanccat aacatctcct tgagcnacac atgggatata ccgccanctt atntaatact 180  
 ttcncngcac ggtaacngac canaancatt cttcactata gaattcatgt cgcttcatta 240  
 tctacctcat tncnccanac cccctttnat ctcatnnatt tatctagaaa nttctgaagn 300  
 tccnnaaggg ttcgttttgc accnccccaa ntaaaaaanc cctnccgntt acntcgaacg 360  
 aaggttttca aangaacagn aattccttta caaaaatcaa naattttaac ttcccnaatc 420  
 cggccccccn gtncccgaaa cccnatttct acgattgcat caccocgggg gncnctcaa 480  
 nccncttct taaaggncca tncctntnnn tgatcctctn ccatccaang gncctttcc 540  
 acttttattg gaaaaccccc nttccccntt ttacccttnn aaggcccctt ccc 593

<210> 118  
 <211> 298  
 <212> DNA  
 <213> Pinus taeda

<220>  
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 <223> a, t, c, g, other or unknown

<400> 118  
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 cggagatatt taaaaaaaaa gaattgtcat tatggtaa at aggtgtgaca gggttatcaat 180  
 agaataactg acgagagtaa actgataatt attaaggtta aagtgttcgt aaagganact 240  
 tggactctag gttggatgcc tacacttaga gcccgttccc gcacttggac ggtcacct 298

<210> 119  
 <211> 631  
 <212> DNA  
 <213> Pinus taeda

<220>  
 <221> modified\_base

CCF0466

<222> (591) .  
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<220>  
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 <222> (607)  
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<220>  
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 <222> (609)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (616)  
 <223> a, t, c, g, other or unknown

<400> 119  
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 acacgtttcc aacggattac gtgccgactg tttttgacaa ttttagtgca aatgtggttg 120  
 ttgatggcaa tacagtaaac cttggcttgt gggacactgc agggcaagaa gattacaaca 180  
 gactgaggcc attgagttat agaggtgcag atgcttttct gcttgccctt tctctgatca 240  
 gcaaggctag ttatgaaaat atatcaaaga agtggattcc agaacttaga cattatgcac 300  
 caaatgtgcc aatcattctt gtgggaacta aattagattt gcgtgatgac aagcagttct 360  
 ttgctgatca tcctggagca gccctataa caacagctca aggtgaagag ttgaagaagc 420  
 agattggagc agcagcatat attgagtgc gttccaaaac ccagcagaat gtcaaggctg 480  
 tttttgatgc tgcaattaaa gtggttcttc agccaccaa gcagaaaaag cggagaaaaa 540  
 agcagaaaaa ttgttctatt ctctaagaaa aatgtggatg ttctgaacgc ncttcactga 600  
 caataangnt gacgtnggaa tatcttcctc c 631

<210> 120  
 <211> 443  
 <212> DNA  
 <213> Pinus taeda

<400> 120  
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 taatgatgga tcaataccac taagtggcag ctggcgtaga tctctgcaat gataagaacc 120  
 agtatcagtc cccatataat caggagatat ctccagcacc tgctgcacta catgtggatc 180  
 ttagtacaga gcctgatcat cctgaacacc aacaatatac gttgaagctc cgggctttcc 240  
 accagcaata ccaagacttt ggggaaatgt gaacgtttca cgaagtgatg gtacatacct 300  
 tgggttgatc ttctctacac caagaacaag cggcaccaaa atcaggatag gcacttggtc 360  
 ttccccttct ccattggacc actctgaaca caagcctcgc agcatcatca atgcagataa 420  
 ctgggcgccc tccacgggtca ctt 443

<210> 121  
 <211> 327  
 <212> DNA  
 <213> Pinus taeda

<400> 121  
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 taggaatcaa catgaaatca gctccagctg ttatcatatg agcaagtggc acgttaaact 120  
 ttgctactcc cctgacgttg tctggatatt tctcttcaag ctcttcaagc tgcttctcca 180  
 agtacttttt accggtgcct aggataatta actgcacggt ttcactctgca attagaggga 240

cagcttcagc aagaatatct ggacctttct gctcttcaag tcttccaata aatcctataa 300  
caggaatatc tggatccacg gtcacct 327

<210> 122  
<211> 284  
<212> DNA  
<213> Pinus taeda

<400> 122  
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ggcctcaagt cgccctgaat ttggtcaaca acatcttgat agagcgagag gacgctccca 120  
attaagatct ggaaactgtc gagagtgatt gaggtcattt ttaatctaaa ctgaattgtg 180  
gggacaattt ttcaattcag atccttctag caaagcaaag caaagcttaa cagtattgta 240  
tccatgagaa tggattctgc acaggtcagg ctccacgggc acct 284

<210> 123  
<211> 412  
<212> DNA  
<213> Pinus taeda

<400> 123  
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cgtcgtggga ggacagagct ccgggaaatc ctctgtgctg gagagcatcg ttggaaggga 120  
ttttttaccg cgtggatcag gtattgttac tagacggccg cttgtccttc aacttcacaa 180  
gactgatgaa ggcagcaggg attacgccga attccttcac caaccagaa agaaatacac 240  
cgactttgca ctggtaagga aggaaattgc ggatgagact gatcgaatta cagggcgctc 300  
caagcaagtc tcaagtgtcc caattcacct tagtatttat tcaccaatg tttgtaaatt 360  
tgactctaat tgatctccct gggttgacaa aagtggctat tgacgggtcac ct 412

<210> 124  
<211> 235  
<212> DNA  
<213> Pinus taeda

<400> 124  
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tggctccact ccacaatacg atgttcatcg ttttgatcac aatacagggt tgtagtcca 120  
agtaggtgcg ctgctgcaga cagtggggca gccctcgtgg gcttggactg cctgtcatac 180  
tgttctctcc ttgcttcagg ctctactgct gttgctgctg ctgatacggg cacct 235

<210> 125  
<211> 353  
<212> DNA  
<213> Pinus taeda

<400> 125  
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tgcaggcttc ttgctgcctg agacaggagc ctcaagaaat cttccccctt tttcaatgat 120  
tgctcattg atctttgttg aagtgatagt atcaactgtt gacatgtcaa tgtatccttt 180  
tcctgtacac atttgctcta ggacaccatc cgagagggca gcaggaggat cagacaggat 240  
ggctatggta tagttgcact tctttacaac ttcggcagga gtgcttccta tggaagcacc 300  
ttgctgaaca agttcttcac acctagacat tgtcctattc cacacggtea cct 353

<210> 126  
 <211> 355  
 <212> DNA  
 <213> Pinus taeda

<400> 126  
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 gcaggcttct ggctgcctga gacaggagcc tcatgaaatc ttccccctt ttcaatgatt 120  
 gcctcattga tctttgttga aatgataata tcaactgttg acatgtcaat gtatcctttg 180  
 tcctgtacac atttgctcta ggacaccatc cgagagggca gcaggaggat cagacaggat 240  
 ggctatggta tagtcgcact tctttacaac ttcggcagga gtgcttccta tggaagcacc 300  
 ttgctgaaca aagttcttca cacctagaca tttgtcctat tccgcacggg cacct 355

<210> 127  
 <211> 441  
 <212> DNA  
 <213> Pinus taeda

<400> 127  
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 gtggtccaat ggagaagggg aagaccaagt gcctatcctg attttggtgc cgcttggtct 120  
 tgggtgtagag aagatcaacc caaggtatgt accatcactt cgtgaaacgt tcacatttcc 180  
 ccaaagtctt ggtattgctg gtggaaagcc tggagcttca acgtatattg ttggtgttca 240  
 ggatgatcag gctctgtact tagatccaca tgtagtgcag caggtgggtg agatatctcc 300  
 tgataatatg ggggttgata ctgggtctta tcattgcagt gatgttcgcc actgccactt 360  
 aatgctattg atccatcatt agctataggt ttttactgcc cggaatagaa ataattttga 420  
 caacttgtgc ttacggcacc t 441

<210> 128  
 <211> 437  
 <212> DNA  
 <213> Pinus taeda

<400> 128  
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 gtggtccaat ggagaagggg aagaccaagt gcctatcctg attttggtgc cgcttggtct 120  
 tgggtgtagag aagatcaacc caaggtatgt accatcactt cgtgaaacgt tcacatttcc 180  
 ccaaagtctt ggtattgctg gtggaaagcc tggagcttca acgtatattg ttggtgttca 240  
 ggatgatcag gctctgtact tagatccaca tgtagtgcag caggtgggtg agatatctcc 300  
 tgataatatg ggggttgata ctgggtctta tcattgcagt gatgtacca ctgccactta 360  
 gtgctattga tccatcatta gctataggtt ttactgccgg aatagaaaaa ttttgacaac 420  
 ttgtgcttac ggtccct 437

<210> 129  
 <211> 434  
 <212> DNA  
 <213> Pinus taeda

<400> 129  
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 gcttggcagg atattataga agattcatca aagatttcat taagctagcc tcgccattgt 180  
 ctagcctctt agggaaagat gttgagtttc aatggactga tgactgcca ggggctctgg 240  
 atgagttgag agataagctg gtatccgccc cgatcttgag aggtctaaac tgggccctac 300  
 ctttccacat ccacattgat gcctcgaaca aagccatagg ggcagcctta ggacaagttg 360

aagagaaaat accatatgcc atatactttg tcagcaaaaa tctgtctaag gcagaactga 420  
actatacggg cact 434

<210> 130  
<211> 427  
<212> DNA  
<213> Pinus taeda

<400> 130  
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aaaatcaaca cacgggtaaat gtcttgagac taacgagaaa ttaataatca cgttggtacaa 120  
agaacagtat gtcccgtcac gtcacgagtg ccctgagaga tcatccaact ttctctgaac 180  
cctcgtgtta cacgcacgca aaatcaagga tcagttgtag ttattgctgg cgtgacagac 240  
gtgacaccta ctgttccgct acaaacgata taattgaatc catgatcgga ttatgtatta 300  
tgatcttagc gcagtgggta tgaaattatg atgaatttgc ttatgatttt ctcagcgttt 360  
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ggccct 427

<210> 131  
<211> 261  
<212> DNA  
<213> Pinus taeda

<400> 131  
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ctgtgaggca cggaaaacga gataagttgt aaaagtttgc tcgctgattt gaggcacgga 120  
aaacgagata agttgtaaaa ttttgctcgc tgattttttg ctgaatattt ctctcactat 180  
aaaaagcatt ttccagaaat aagaaggagc tttcgaactg gttttcccca agagttgtag 240  
ggggtttttc cacggtcacc t 261

<210> 132  
<211> 262  
<212> DNA  
<213> Pinus taeda

<400> 132  
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ctttaggtag aaggcgagga gggctttatt agtacagttc tgtgtaattt taatgatatt 120  
ttttgcacta ttattttatg gtaaaaggat tgatttgtct tttgcaaagg ccttaggatt 180  
gtttatttac ctttgggcta agggaggagg taaatttttc acattgggaa aaaaaatgcc 240  
tcggtcgttg tcacggtcac ct 262

<210> 133  
<211> 126  
<212> DNA  
<213> Pinus taeda

<400> 133  
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aaattttgtc ttcaatataa gttgcaaatt ctttaattaat tatgatcacc atttcaacgg 120  
tcacct 126

<210> 134

<211> 238  
 <212> DNA  
 <213> Pinus taeda

<400> 134  
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 ttgggtgtgt tgtacttggt cttatcttgg ttaatcaggc ggatccttgc cctgtaatcg 120  
 gtcttcccct ctctcctgcg cttgaatttg acctgaaacc tcttgaagta ggccctgggt 180  
 ttctgggctt tgacgaaaac catgggttggt gatctcctct ctctgctac ggtcacct 238

<210> 135  
 <211> 245  
 <212> DNA  
 <213> Pinus taeda

<400> 135  
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 gaatgggtacc agcatagaga agaaacacag acggtttgaa gaggatgatg gatctgccat 120  
 agatgaacga tcaaataagg ttcaaaagct ggaaaatgat ggtgaattcc atgcatccca 180  
 cttggctctg tccctcaagt tgaatatacc tggacgagag gtattgcatt tcccaacggt 240  
 cacct 245

<210> 136  
 <211> 239  
 <212> DNA  
 <213> Pinus taeda

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 taatcttcca tggcagactc ggggggttta tctttaagtt gaatttccat gcatcccctt 180  
 gggctctgtc ctccagttga atatcctgga acaagagggt ttgctttcca cggteccct 239

<210> 137  
 <211> 276  
 <212> DNA  
 <213> Pinus taeda

<400> 137  
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 cgtcttcaaa tgattgaaat atggaccttc ttaaccgttc tggaaatcta tcaatcttca 180  
 aaattttgaa actttgcctc gatcttggag tgatcagact tgatttctaa tcctagaaat 240  
 accctatcac tggctacctg gtctgtacgg tcacct 276

<210> 138  
 <211> 274  
 <212> DNA  
 <213> Pinus taeda

<400> 138  
 ggtgaccgtg ggataggcag aagcaagaaa cacagaagtt cttccgggaa tgtaagcgct 60  
 gacagtgggg gagaaagtag tgaacaagga catggtcggt atgaaataca tggcaggcga 120  
 tggatttcaa gggattaagc atctcaatgg atatttacta ttggactgta gtaactttcg 180

ccatcgcttt ttgaacacat ctgtggctta actgtcatct gtaatggtaa gcgaaccagg 240  
 ttttgttctg aaccacttgt atgtacggtc acct 274

<210> 139  
 <211> 526  
 <212> DNA  
 <213> Pinus taeda

<400> 139  
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 ggggttaagct cggatatatg aggtttatat ataagtcctg ttagtggtcag tcttaccagc 180  
 cttcctccag tgatcaaatg tgctctaaca aagtgtttt gaagtgtcaa ggtcaaatta 240  
 tgtcatttca gtgagtcttc aaacaaaatt tgggtcactag gcattaggtc taagggtttg 300  
 cttgaactcc ctctagagtt gtccaaatgg gcgggctatg tcatcattta agctgaatct 360  
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 tcttgttcac ggcttcactt gtgccttttg caaattcaat tccctcctcc aagggtttga 480  
 aaccaattct cttggacggc ccctaaacca aatctgcaaa atccac 526

<210> 140  
 <211> 538  
 <212> DNA  
 <213> Pinus taeda

<400> 140  
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 ggggttaagct cggatatatg aggtttatat ataagtcctg ttagtggtcag tctttccagc 180  
 cttcctccag tgatcaaatg tgctcttaca aagtgtttt gaagtgtcaa ggtcaaattt 240  
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 ttttaactcct tctaaaagtt gtccaaatgg cgggctatgt catcatttag ctgagtctat 360  
 catcatcata ggtttttcatt atcatgtcag tgtctaata gtcattttacg tcttgttcag 420  
 ctcagtgtgc ctggcaattc attcctctct aagggtttgaa ccattctctt gacggcacta 480  
 agccaatcca cactgggggc gtctattgaa tcaacccgga cactgggtta caggcaac 538

<210> 141  
 <211> 498  
 <212> DNA  
 <213> Pinus taeda

<400> 141  
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 aggcacaact gaagcatgaa caagacgtaa aatgactcat tagacactga catgataatg 120  
 aaaaacctat gaatgatgat agactcagct aaatgatgac atagcccgcc atttggacaa 180  
 attttagaag gagttaagc aaaccttaga cttaatgctt agtgaccaa ttttgtttga 240  
 agactcactg aaatgacaaa atttgacctt gacacttcaa aatcactttg taagagcaca 300  
 tttgatcact ggaggaaggc tggaaagact gacactaaca ggacttatat ataaacctca 360  
 tatatccgag ctttaacccat tataaaccat ttacaaagaa atacctgcaa aacatacctt 420  
 ttccaccttt atacggcgct tacatagata ttgatgctcc ctttatcaca atcactaatc 480  
 gctccaccac ggtcacct 498

<210> 142  
 <211> 350  
 <212> DNA

<213> Pinus taeda

<400> 142

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aaagactaga agagtgaatc aacctattct atttagaata tatatttttg gggtgcttgc 120
ttatcgtttt gggggttaat gtatgtcgta ctacgggtctt atgcccta attgcccattg 180
aatcaacta aattgacagt aaccgactaa aagttgggtcc acactaagat atcgatgacc 240
aacgatcata aaggtgtcca tgatccta atgtatatgtg tcaattaatg taactttggt 300
gctacaacat aaaaccattc gtgggggatcc tcctttttat gcggtcacct 350

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<210> 143

<211> 346

<212> DNA

<213> Pinus taeda

<400> 143

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cttctgtatt tttgggttgg atgagcaaca ttgacttgct ggaaattgac caggtttgac 120
tggtatttgg acttggaattt tggcacagat ttctagacaa tttgtatttg taaaccttac 180
agaagaataa tttatcgaag aagaaaaatg ctaggtttcc cctcaagttt gggtttccca 240
agggaaaaat tggtgtccca atgggtgaat tttccaaagg tctcctaacc cgacaatacc 300
tcctaagaat tccttaattt aacctttctt gttttcacgg tcacct 346

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<210> 144

<211> 335

<212> DNA

<213> Pinus taeda

<400> 144

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aggtgaccgt gaaggagcag caacaatttg attttgtttg ggtagatcgg ggattttctc 60
gtggaacata cctgattgag tataaactaa gtcaaggtag tgtgcttgag aaattacttg 120
ctcctcagta actactctgg ccttagctac atcctcagtg atcttgggta gtaaagattt 180
tacaacccat tcagctaaga tctgatccgg gatataaact ttcactaaac gtcgtcgacg 240
tctccattca tggatatgat ctgaaatgta agtggacggt gactgcttta acgaagttaa 300
taattctgtg ccattttcat atctgacggt cacct 335

```

<210> 145

<211> 344

<212> DNA

<213> Pinus taeda

<400> 145

```

aggtgaccgt acctaattgg aagacacttc aaggtaaaaa caaatcatga tagtcttaaa 60
taccttttag aacaaagatt atattcagaa caacttgctg gaagtgtacc aagtatgact 120
ggtattgaga cttagatctt cgcacagatt tcaagacaat ttgttggtgt aagactcact 180
cacgaaaagt gatgtggata tgaagaactt ccctgtcgcc tcttggttag gagtctccca 240
ctcataggaa ttgtgtaact tataacttgg tccactaaag aagttaggta cagtgtgttc 300
ctttaccagg ttccctggtg taacttacia atctacggct acct 344

```

<210> 146

<211> 288

<212> DNA

<213> Pinus taeda

&lt;400&gt; 146

```

aggtgaccgt cactggaggt ttgagatgct tgatcggtac tgaaatgaga catgatcaga 60
ataggacctt gttgagggcg tgtctcacc cccatccaca atcttttgta attttgagtt 120
tcgttttagaa catacttgta ggataaaaact taccttactc atggatcatg gctgtatatg 180
tttatcgacc agagacagat atgccgaatg aaagcgagtc tagtattcta atgcaatata 240
ttggtagtat gggacatagt actgaacact tgtatagtac ggtcacct 288

```

&lt;210&gt; 147

&lt;211&gt; 288

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 147

```

aggtgaccgt ggtctcagtt atgccatattg tccgcccctc catatgatgc tccgcctcta 60
tgggggtctt tgcgatgttg atatctagta gtacttcttg tcctattgca gcaacctgta 120
ctggtggttg tgttggttat gggctctccta cgcgatggag atatgagaca cccataggtc 180
gaacaggctc aatatctgga atccaacgct atttggtgta gaagaaacgt tgctcccgtc 240
ctttagcttt ggctgggtcac tatccttacg ctccacgtac ggtcacct 288

```

&lt;210&gt; 148

&lt;211&gt; 208

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 148

```

aggtgaccgt tgggaaatgc aatacctctc gtccaggat attcaacttg agggacagag 60
ccaagtggga tgcattggaat tcaactaaag ataaaacccc cgagtctgcc atggaagatt 120
acatcactaa ggttaaacag ctacaagaag tagcatgatg ccattgatct ccctttccct 180
gcctcttcta ttatcagtac ggtcacct 208

```

&lt;210&gt; 149

&lt;211&gt; 197

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 149

```

aggtgaccgt caaggcaaag tgcattgcca ctcatgggaa ttagttaata tagctaattt 60
gagatattac agtcaactgt gggatatatg atgtgagatc aagggtgcagt ttagatatta 120
tcagtgggtc agtttagata ttatcagtgt ttgtgaatct gcatactgct tttgggttggt 180
tctaactacg gtcacct 197

```

&lt;210&gt; 150

&lt;211&gt; 527

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 150

```

aggtgaccgt agacatatat catggaaaac ccaagtaaca tacaaacaca aaacacatgg 60
aaacttcata aaacctccac tcgtcataag ctttattgct atgttattgt ggtgttgcat 120
cgtacttagt ggagggttatt gttatgttat gtgttctatt ttcctcccga acgcccttcg 180
gaattgagct aaccgtgggtt aacaacatgt gggctttttt tctcgacagt atatatataa 240
taaactctta tttttttaa aactaatgct attgcattta tatactggaa aaaatgattt 300
ttcttgatatt atcgaaaata ataatttagt ttcttgataa tcaactggaa ttaagaaatt 360
acaaacccta acaacatcaa gaaattttaa aacacataag ctagaaattt taaaacacat 420

```

```
<210> 151
<211> 171
<212> DNA
<213> Pinus taeda
```

```
<210> 152
<211> 412
<212> DNA
<213> Pinus taeda
```

```
<210> 153
<211> 409
<212> DNA
<213> Pinus taeda
```

|             |             |            |             |            |             |     |  |
|-------------|-------------|------------|-------------|------------|-------------|-----|--|
| <400>       | 153         |            |             |            |             |     |  |
| aggtgaccgt  | ggataagaga  | acgctttgcc | gactctctgg  | gatgcccttc | cctccatagc  | 60  |  |
| cgtcgtggga  | ggacagagct  | ccgggaaatc | ctctgtgctg  | gagagcatcg | ttggaagggg  | 120 |  |
| ttttttaccg  | cgtggatcag  | gtattgttac | tagacggccg  | cttgctcctc | aacttcacaa  | 180 |  |
| gactgatgaa  | ggcagcaggg  | attacgccga | attccttcac  | caaccagaa  | agacatacac  | 240 |  |
| cgactttgca  | ctggttaagga | acgaaattgc | ggatgagact  | gatcgaatta | catggcgtgc  | 300 |  |
| caagcanagt  | ctcaagtgtc  | ccaattcacc | ttaatatatta | ttcacccaat | gttggttaatt | 360 |  |
| tgactctaata | tgatctcctg  | ggttgacaaa | attgctattg  | acggtcact  |             | 409 |  |

```
<210> 154
<211> 241
<212> DNA
<213> Pinus taeda
```

```
<400> 154
aggtgaccgt  tgggaaatgc  aatacctctc  gtccaggtat  attcaacttg  agggacagag  60
ccaagtggga  tgcattggaat  tcacttaaag  ataaaacccc  cgagtctgcc  atggaagatt  120
```

acatcactaa ggttaaacag ctacaagaag tagcatgatg ccattgatct ccctttccct 180  
gcctcttcta ttatcattga tctctctttc cctgcctctt ctattatcag tacggtcacc 240  
t 241

<210> 155  
<211> 289  
<212> DNA  
<213> Pinus taeda

<400> 155  
agggtgaccgt acatacaagt gctcagtaca atgtcatata ctaccaatac atttgattag 60  
aatacgagac tcgctttcat tcggcatatc tgtctctgga tgataaacat ataaagcctt 120  
gatccatgag taaggtaagt ttgaagctac aagtattttc taaacgaagt tcaaaattac 180  
ataagattgt ggctggggcg tgagaaacgg cctcaacaat gtctgttct gatcatgtat 240  
catttcagta ccgatcatgc ctatcatacc cgctggtga cggtcacct 289

<210> 156  
<211> 209  
<212> DNA  
<213> Pinus taeda

<400> 156  
agggtgaccgt actgataata gaagaggcag ggaaagggag atcaatggca tcatgctact 60  
tcttgtagct gtttaacctt agtgatgtaa tcttccatgg cagactcggg ggttttatct 120  
ttaagtgaat tgccatgcat cccacttggc tctgtccctc aagttgaata tacctggacg 180  
agaggtattg catttcccaa cggtcacct 209

<210> 157  
<211> 191  
<212> DNA  
<213> Pinus taeda

<400> 157  
agggtgaccgt atagtgtcaa gcttttctgg attggataat ggacggcggc ttgacgacata 60  
catctacaca ttctgtaaca agtacactct actgcaacag cagacccaat ttcacctctt 120  
cagtcagcca gagatctcga tggatttggg ttgaggaggt tggggttctg cctgcttcgg 180  
cacggtcacc t 191

<210> 158  
<211> 415  
<212> DNA  
<213> Pinus taeda

<400> 158  
agggtgaccgt gctaagtaat tatcatctgt acctgtgctt gctgcaggaa gtaaaccaac 60  
ccgactagtc tttttaataa tacagggagc cttgccacca atttcctctt gaagcaccca 120  
tattggacgg gtttgtgtca tcctctgtat tatccttttt catccaagc aggctgtctg 180  
ttttttagt agaaggatca caacacagat caggccctcc atagtacaaa gaagaaccga 240  
ggaaagtatc attaacgttc tgactcctgc catgaaggct tccactatga ccttgaccct 300  
tttgtgaatt actgccattt agaccttgac tggctcttgc aaccaaattgc ccagaaatgg 360  
aacttctttg tgctccagtt ccattgtggt tagttgaatc cctaccacgg tcact 415

<210> 159

<211> 414  
 <212> DNA  
 <213> Pinus taeda

<400> 159  
 aggtgaccgt gcaatattgt attccaggac caagtactta ggacagaatc aggtcacgag 60  
 tggctccact ccacaatacg atgttcatcg ttttaatcac aatacaagtt tgtagtcca 120  
 agtaagtgcg ctgctgcaga cagtggggca cccccgtgg gctttgactg cctgtcatac 180  
 tggtccctcc ttgctcctgc tcttgctctc gctgggctgt ggtgagttac taacctgggt 240  
 cgaccacaaa gggcttctca ctagggcggt aggctgcatg gatctgccag atattgtggt 300  
 tgcaagggac agaggcatga gacacaggcc tttgctttgc agaaactgca ttgctgaccc 360  
 catgttttca tccatcagtt ttgctacctc tccttctggt atggacgggc acct 414

<210> 160  
 <211> 225  
 <212> DNA  
 <213> Pinus taeda

<400> 160  
 aggtgaccgt atccgcagca gcaacagcag tagagcctga agcagggggac ctaattacag 60  
 tcaaaagtcc agggctacca atgcctgcta acagcgcact tacttggact aacaaacttg 120  
 tattgtgatt aagacgatga acatcgtatt gtggagtgga agccactcgt gacctgattc 180  
 tgtcataagt acttgggtcct ggaatacaat attgcacggg cacct 225

<210> 161  
 <211> 234  
 <212> DNA  
 <213> Pinus taeda

<400> 161  
 aggtgaccgt atccgcagca gcaacagcag tagagcctga agcagggggac ctaattacag 60  
 tcaaaagtcc agggctacca atgcctgcta acagcgcact tacttgggaa taacaaaatt 120  
 tttattgtta attaaaaacg aataacatcg tttttgtggg agtggaacca ctcgatgaact 180  
 gaatcctgtc ctaagttctg ggtcctggga ataacatatt gcacgggtca cctt 234

<210> 162  
 <211> 548  
 <212> DNA  
 <213> Pinus taeda

<400> 162  
 aggtgaccgt tacagctagg gaagacttta aaagtttgta aaactaagca tagctcttaa 60  
 aactgaagt taaaagacat gattggaatg tgcaagtggg tcagtatcca aatattgaag 120  
 gttgcagaat atggagctac tgtgcaaacg agtaacttta tctatatattt cacaagatca 180  
 tacaatggga aacgttgaga taacaactgc atcgggtgaac cagaatagtt ataaaagttc 240  
 ttgcaagtaa agggatgaat aattgcatgg ttggaattaa gaatgaccat gtagagctgc 300  
 tatacagatt ctccaagggt ttatatattga ggagtgcgcg ctattgatgt tgtgcaaaaa 360  
 tttcagaaat taagttctgc ggcatttatc aaggttggtt gagccattta aatagcaagt 420  
 ttttgtttct ccaagtactt tcaggaaagc agatagctct agttataatg ctccagtgc 480  
 aaacacatct agttggggga gtgaatgacg cttttgtcat tctcttttgg tttcaggcac 540  
 ggtcacct 548

<210> 163  
 <211> 176

<213> Pinus taeda

```

agggtgaccgt  ggacaaactc  tagaacaggc  atagctttca  tgttcagttg  tttttaaaga  60
gcagtcctcg   cagcagatcg  tgcagcttcc  tgcttcaactt  ccgttgattt  tcctgatctg  120
aaatacccggt  aaacttqctg  aaqaacccaa  atacttaata  qcqtctctaa  acaaaa      176

```

<211> 699

<213> Pinus taeda

|             |            |            |            |             |             |     |
|-------------|------------|------------|------------|-------------|-------------|-----|
| aggtgaccgt  | gcctgaaacc | aaaagagaat | gacaaaagcg | tcattcactg  | ccc caactaa | 60  |
| tgtgtttgtc  | actggagcat | tataactaga | gctatctaca | agccaaaaca  | gtgttttgga  | 120 |
| gagattccat  | aacgtcattg | cctctgctac | acatcattca | ttgggttcaa  | taatgaagcc  | 180 |
| acgtgctaag  | gacattgaga | gaatcttata | aaacaagaaa | tatagtaa at | tgggaaatgc  | 240 |
| at tttatcgt | ctaacctgct | ttcctgaaag | tacttggaga | aacaaaaact  | tgctattaaa  | 300 |
| tggctcaaac  | aaccttgata | aatgccgcag | aacttaattt | ctgaaatttt  | tgcaaacatc  | 360 |
| aatagcgcgc  | actcttcaaa | tataaaacct | tggagaagtc | tgtatagcag  | ctcacatggg  | 420 |
| cattcttaat  | tcacaccatg | caattattca | tccctttact | tgcaagaact  | ttataactat  | 480 |
| tctgggtcac  | cgatgcagtt | gttatctcaa | cgtttcccat | tgtatgatct  | ttgaaaatat  | 540 |
| agataaaagt  | actcgtttgc | acagtagctc | catattctgc | aaccttcaat  | tttggatact  | 600 |
| gaaccacttg  | cacattccaa | tcatgtcttt | taacttcagt | gtttaagagt  | atgcttagtt  | 660 |
| ttacaaactt  | ttaaagtctt | ccctagctgt | aacggtcac  |             |             | 699 |

<211> 620

<213> Pinus taeda

|            |             |             |             |             |            |     |
|------------|-------------|-------------|-------------|-------------|------------|-----|
| aggtgaccgt | aaaataccat  | gagaaatgct  | ttcatcaggc  | accgctggta  | ggttttctta | 60  |
| agcttttcat | taggcaaaag  | aggctccgtg  | agttgatcgt  | taattctctc  | cttgaatgcc | 120 |
| atattgacca | gacactctga  | ttagaaactg  | gaatacaact  | gcacatatag  | tcattctata | 180 |
| tgattcatcc | ttctgcactt  | cagcatcctg  | cggcaactct  | tcatcccgcc  | atactgagaa | 240 |
| aaattatttg | actcttgatc  | atgtgtagat  | gaatcttcat  | gaatcttctc  | atcttcattc | 300 |
| ttgtctttat | atcttttagga | agtgcactctg | gtaaaagtat  | aaatgcatct  | tcacgggtgc | 360 |
| ttcagttttt | gcatgctccc  | ggttcttctt  | gttttagcatg | tggatctagc  | aaatcactaa | 420 |
| atgtagttct | ctcaattggg  | ctgggtggaaa | ttctcctcaa  | ttcgagaatt  | acgaatcatc | 480 |
| atacctgagt | aatatatgtt  | gccctgtaca  | tgcatatgct  | ggttttttggc | tccaccattc | 540 |
| tccaaagggc | tcaaaaacta  | tgcgaccctt  | ggttgccgta  | gtggaagggt  | atacattgcg | 600 |
| ttcccagtag | ccacggtcac  |             |             |             |            | 620 |

<211> 439

<213> Pinus taeda

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| aggtgaccgt | ggaggggctc | cacttatatg | catagatgat | gctgcgaggc | tgtgttcac  | 60  |
| tggccaatg  | gagaagggga | agaccaagt  | cctatcctga | ttttgggtgc | gcttggtctg | 120 |
| gtgtacagaa | tatcaacca  | gggtatgtac | catcacttcg | tgagacgttc | acatttccc  | 180 |
| acttccttgg | ggagctgg   | gaaagcctgg | aacttcac   | atctatcgtt | ggtgtgagga | 240 |

tgatcaggct ctgtacttat atccacatgt agtgcagcag gtggtggaga tgtctctgat 300  
aagttggggg ttgatactgg ttcgtatcat ttgcagtgat gttccccgc tgcccttaat 360  
tgctattgat ccatcattaa ctatagggtt ttactcgccc ggaataagac aatcttttga 420  
cacttggtgc ttgggtcac 439

<210> 167  
<211> 289  
<212> DNA  
<213> Pinus taeda

<400> 167  
aggtgaccgt ggcgcctgac ctgtgcagaa tccattctca tggatacaat actgttaagt 60  
ttgcttttgc ttgcttgaag gatctgaatt gaaaaattgt cccacacatt ctgtttcgtt 120  
aaaaatgacc tcaatcactc tcgacagttt ccagatcttg attgggagcg tcctctcctc 180  
tctcaagatg ttgttgacca aattcagggc gacttgtggc cagaaatcgt acattctgcc 240  
atctacctgt tattgagctc cccgatttat atgcgctttt gacgggtcac 289

<210> 168  
<211> 314  
<212> DNA  
<213> Pinus taeda

<400> 168  
aggtgaccgt caataccatt aaactgggga ttcgtctcaa caagtcaaca tgctaaccctc 60  
acagctccaa tcaaacacag tccgtcgaag ggcgctcaca ctcacccaaa ttacttccct 120  
ctgcaagact cacaaaatca gattcttcat gaattgctca aacgaggctg ttatggatga 180  
tgcagctgat tactcaagtg acagcactct gaatccccgt cccatatata gcgacgcggc 240  
gtttcagccg tgactggctg caacagcctc agtgggacaa aaggccagaa gccccccaag 300  
gttctcacgg tcag 314

<210> 169  
<211> 242  
<212> DNA  
<213> Pinus taeda

<400> 169  
aggtgaccgt gtcgatgttg ttagatgtga ttaggggtttt atttcttgat acagatgcac 60  
tgtttctctg tttattcttt tatttcttca atgtatgttg tcaaattata cttagtcaga 120  
tctcctttta tcgttcgtca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aagtttaaca 180  
attaaaaggg gaaattaggc catatcagct tgtcgtatgg acccacatgc actgtaggtc 240  
ac 242

<210> 170  
<211> 195  
<212> DNA  
<213> Pinus taeda

<400> 170  
aggtgaccgt atgcagagtc aaggtttagt tccttcagag cctgccccgag tagcactgag 60  
gcagctcaag ccatttcacg taggaagccc acaacaaaat agaaatcaga gtgagtcttt 120  
gatcgagtaa ccataagtt cttagctccc gttccatctt aacataagca tttttcttcg 180  
tcttctcgca gccgt 195

<210> 171  
 <211> 217  
 <212> DNA  
 <213> Pinus taeda

<400> 171  
 attgcagagg acttagagag ggaaaaccgt tccgatctgg tgaagcaatt ggatgaagcg 60  
 ctctggaatt gattcccgtt tctgatgata tcgtacggct aagctcagct cttcaggcat 120  
 tggcagacaa tacgattctt caaatgagat gacagatttt aagaaactta taggatgaca 180  
 tatttcctag cttgaagcgg attcccccta cggtcac 217

<210> 172  
 <211> 381  
 <212> DNA  
 <213> Pinus taeda

<400> 172  
 aggtgaccgt ccgataaagg atgagaatat aggtagatca acccaaaaac actctcagaa 60  
 aacgattaaa gcctaaccac aagatcggtg agtaaattta acccggtaac ctccacataa 120  
 aatatactta gcaacaataa actcaacaac taaactatcc ctttaaaatt aaattatcct 180  
 tatttattta aaaaaacaaa tcctttatat actaagggtcc cctgcacatc tattactaag 240  
 gtaaaggaag ggaattatat gctatcattg taaactttga cttccgtatt tatgatcaga 300  
 ccatgagttt gataattaat tttacgctct ttactcccca ttcaaggcac gtgcctgggtg 360  
 atatatgaac gccaaattat t 381

<210> 173  
 <211> 498  
 <212> DNA  
 <213> Pinus taeda

<400> 173  
 aggtgaccgt agaatacaat ctatgtatca aaatgctaac aaagagaatt tggtgtctag 60  
 cttgtaaata tacaaaagaa actctcacaa ggagtggagaa gcactaaggc ctttggaaag 120  
 aatacgtttc tattcagcgg agtgtatttt gagctacggc ttggcacaac tcatcctata 180  
 aaacaagact ctgtgagagg gcagagacct tgatcctggg cgtggcaagc cgggtgccta 240  
 ttgcggtaaa atcgagaagg gggaccctgg aaaagagagg ctgaaatttg tttcattctg 300  
 caactgaaac ctaaccggag gccgaatctg atcattttcta agacctttgg ggtcctgggc 360  
 atcccattaa aagaacgctg ctaactctcc cctccacaaa gggccaatgc gctcaggctg 420  
 ggcttctcat cttcacattt cttgccgaaa tctatctgaa tttgttgtat tgaataacac 480  
 tgcctcctac acggtcac 498

<210> 174  
 <211> 604  
 <212> DNA  
 <213> Pinus taeda

<400> 174  
 aggtgaccgt gggcgccgtg gctcaaaagg ccctcgcaga cgcccgcctc atcaagctca 60  
 tggggccccc ccaccctcgg ggggcaagcc gggaacgttg ctgtcagacg aggcgaggac 120  
 ctggaactgc cgttgaagga acggttctat attcagcccc tctcggcgga ccaggcgctg 180  
 cgagagccaa ggaatccgcg gaagcaaadc ctggagggtga aaaagctgat agataaaagg 240  
 cgtggccgta cgtccagaac gacctccgct ccaaggcttc ttaccttcgc tacgactcaa 300  
 caccgttatc tcctcaaagc ccaaggaaca gaaaaaacc ctcaaaacct caccctaaag 360  
 cttttttgac acccttgaca aacctggact acgctgcaag gagccaagga taccctaaag 420  
 gcagaaaaaa tactttgcag aagctgggtga accgccctta atgatgttca ttccaagctt 480

ggttaagctg tattgcactc attgttaacc acacttaacg ccaatccaat ctatgctgtg 540  
 ttgcatctcc acttcttagt taataacggt ctgtgttccc aaactctgtg ccacacacgg 600  
 tcac 604

<210> 175  
 <211> 561  
 <212> DNA  
 <213> Pinus taeda

<400> 175  
 aggtgaccgt acaatacaaa taggtagttt atcacattgt agcttataga atgtacaatt 60  
 gaaatcaaat aaattcaacc aaactcaaat aatatgatca tgtgctcctc accttctcag 120  
 caaactcgta gagcagaaaa aaggattatg ttaaatcaca gttcacacat tagggtaaatt 180  
 cccactaaat gacctctctt cattatccaa gtatctgaca ccaacatatt tcaaacaaat 240  
 agtgcaaaaa ggaatgggtga agtaaaatag tcaaaactaa aaaataagct taaaatttct 300  
 cacatgtttg aatatgtgca ccacaaattt tgttagtgtc atcaaaatgc atgtaatcaa 360  
 cttgccgtgt atataatttc acacaatatc cgtaaaattt tgcaattcct tatgagcatt 420  
 tcatgtctag agattgcaat gacttggcta caaacatggt tctctacaca agatcacaaat 480  
 atttagtcag gacacgaatt gcaatgggga ttctcacaag catcacaagt catctcccat 540  
 gtactaaaaa attgtttaa t 561

<210> 176  
 <211> 382  
 <212> DNA  
 <213> Pinus taeda

<400> 176  
 aggtgaccgt atagtgcata ttcagattgc aattacagac gtattagaac cagatttttcg 60  
 cttcgataca gtcacatcgag agcaacagag atccagatca aaaaccagac acagtttaag 120  
 aacatcgaaa taccaagccc agggacagtt accagcatat agctctacca ccaacagatt 180  
 attacagaac caaaacataa gaccacttgc agacaaaaat aaaccctaac gcagaacgtg 240  
 gcaactatct cctccagcta ccaccatcgg aaccaccacc accatagcga gaaccccacc 300  
 accaccatag ccgccaccgc caccaccata accaccacca ccaccaccac tgtaccgcca 360  
 ctaccgcat aaccacgggc ac 382

<210> 177  
 <211> 196  
 <212> DNA  
 <213> Pinus taeda

<400> 177  
 aggtgaccgt ccttggagat accagcttca aaacctccag tgggtggagtc gatgatcaaa 60  
 ctgcacagtc agcctgagat gttccagtaa tcatgttctt gataaaatca cgatggccgg 120  
 ggcatcaatc acagtgcagt agtatcttagt tgtctcaaac ttccagagtg caatatcatt 180  
 gtgataccac ggtcac 196

<210> 178  
 <211> 141  
 <212> DNA  
 <213> Pinus taeda

<400> 178  
 aggtgaccgt atagtaggaa ctttaggtgc tttgggtggca ctctccaatt ttcatgtcct 60  
 tacatacccc actacggaga agggtagccc aagatttgaa cccaagactt ccggttcgtg 120

agacttcatt tccacgggtca c

141

&lt;210&gt; 179

&lt;211&gt; 478

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 179

```

aggtgaccgt aagatcaaga gcacagaaag cagccatagc cccgcccatt gaatgcccatt 60
aacaataatc tgtaacccat ctctctgttt ctgagctttc tgaactgctt ctacaacagt 120
ggtcgtaagg ttgtgttgtg ataagcagag taaaatccat aatgtaccat tgcaccagca 180
tattaggata gttgagatca agtgtcttac agaataaatc ctccacccaa ttctgtagct 240
cctttcttga gtacccctga atgcaattac aattgcattg atatcttctg ccacaccaca 300
aaagcctgaa ggcagtgttg tacatcaact ataagctcta ccacctgaaa accccagtc 360
aaccattgca cctagaacaa gtccaagaca ttagagcact caaatcatcc ataagaccgc 420
agaagcatat tgcacaagta tctcagcaag tgttcgatta tagacatggc cagggtcac 478

```

&lt;210&gt; 180

&lt;211&gt; 381

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;220&gt;

&lt;221&gt; modified\_base

&lt;222&gt; (58)

&lt;223&gt; a, t, c, g, other or unknown

&lt;400&gt; 180

```

aggtgaccgt gggaggggag atttttgatt tatattttcca atataaaaaga aaatctangt 60
tgtaaggaca tggcaagagc tcttattttcc ggggttttag ccggtggcccg gagcggtatga 120
aagcaaagtgt aagtcactcc gtgctttctc ggcatttgga cgcttctact ctaccgcact 180
acagacggga ttgaacctcg catctctgag tgtttggtcg tttacatggc ggacttggtc 240
cgcacctctg cggacgtcaa atgccgcgac gataatccct ttgagaacag cgatacggca 300
gaaagatcgc cgttgacgaa gcgagaaaac tattgagact tgcagatgtg gagctgaaga 360
agagcttgag tcgacgggtca c 381

```

&lt;210&gt; 181

&lt;211&gt; 521

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 181

```

aggtgaccgt ccgttcgggg tgtattgtcg aacacgtagg atggtgctac gttgaaacca 60
ccgttacctt cttcgatatg ttatagttcg agttcatacg gaggggaatac cgtttgtagt 120
gttattcagc acaaccccgt cctgattaaa ccccccgca accaaggacg tattcgacgt 180
tcggtattgt ttgacacact caagttataa ccctgaatag gcgctaccg aagtaagcat 240
tgtaccagtc gttatttttg ccttcgtatt gcgaaggatt ttgaaatata tccggacagg 300
ctgcaaccga tcttcataaa actctttctt aaactgagca aactgaacag cattagcatt 360
ttgacccgac ctttcacatcg cacctgctgc acaccgcat acgtattaaa gctatgttcg 420
tctggccagg tttgcctttt ttggttgtaa tcaggacaac gccgttagcc gcccgcgatc 480
cgtagagcga cgtagaaagc cgcactcttc agcacgggtca c 521

```

&lt;210&gt; 182

&lt;211&gt; 307

<212> DNA  
<213> Pinus taeda

<400> 182

```

aggtgaccgt gaaatatgtg ggagatgata tgtgggtttcc tgaatattca cctcttgtgt 60
agaaaagtga gatccttaag atgttttgct aataagactc ttaggaatgt tggaccctt 120
tcagaatgcc atttgaatag attcaagggtg gtagctgttg cctggggctg ttttaggggtt 180
ttaggccatg ctctgtaatt tcattgagtc aaaattggat taactgggtg cttttacctc 240
ataatagcta ctgcagtatt tgtcgatata gcttccctat ttattgactc tccttaggta 300
cggtcac                                     307

```

<210> 183  
<211> 519  
<212> DNA  
<213> Pinus taeda

<400> 183

```

aggtgaccgt ccgttcgggg tgtattgtcg aacacgtagg atgggtgctac gttgaaacca 60
ccgttacctt cttcgatatg ttatagttcg agttcatacg gagggataac cgtttgtagt 120
gttattcagc acaaccccggt cctgattaaa ccccccgca accaaggacg tattcgacgt 180
tcggtattgt ttgacacact caagttataa ctctgaatag gcgctaccg aagtaagcat 240
tgtaccaagt cgttattttt gccttcgtac tgcgaaggat tttgaaatat atccgcacag 300
gctgcaactg atcttcgtaa aactctttct taaactgagc aaactgaaca gcatcagcat 360
tttgaccgca cctttcatcg gcacctgctg cacaccgca tacgtattaa agcaatgttc 420
gtctggccag gtttgccctt tttggttgta acaggacaac gccgttagcc gccgcgatcc 480
gtagagcgac gtagaagccg catctttcag cacggtcac                                     519

```

<210> 184  
<211> 629  
<212> DNA  
<213> Pinus taeda

<400> 184

```

aggtgaccgt cgtcagaaaa aacgtgattt ccgcaaactt tggatcactc gtatcaatgg 60
gcagctcggt tgaacggact ttcatactca caattgatgc atggtttgaa gttggctgaa 120
tcgaagtga cgttaaaatg ttggctgact tggctgttaa cgatgcagca gctttcaaac 180
tcttgacgac gcagctaaag ctaagcttgg gtaaataatt aaaaaaagaa ccgaggtttc 240
cttggttctt ttttataact tttaatgaaa agtatgaaga gagaaacagc ctgtcttcta 300
cttatagtat aagataaaaag cttgttactg ataagacagc tttcatggta aagcagttaa 360
aaatagggat ttgcatata atagaaaaaa cagacgttta tgtaaataaa aaacagtaga 420
atggagaaat tatgtcagag aatcgtttgg cttgggatca gtattttgcg gccaggctct 480
cttaatcgct aatcgctcaa cctgtaagcg agccaaagggt ggctccgtat tgtcaaggat 540
aataagggtt atttcaactg ggtacaatgg ctcagtttca gggactggag actgtattga 600
ccaaggagtg cctggtcatt gacggtcac                                     629

```

<210> 185  
<211> 413  
<212> DNA  
<213> Pinus taeda

<400> 185

```

aggtgaccgt ggcggagggtt agggaaagttt gacttctcat tttctcacgc actcctctcc 60
tcgtaacctc ggtcgagtcg atggcggctt tttagtcgag tgtgctaacg caccctccgg 120
cctcaaaatt tccagctact cgtatttgat caatgctgaa atcgcgtaat tacgtagtaa 180
taaagcgtaa tgaattctat aatgaagcat gtttctctat agttcatgtg ccgagaggaa 240

```

taatgaaaat gaggccttat atattatctg gggctcaagg agatgttatc ttttccttcc 300  
 ttgggttagag accgtcaacc ttcacttgat tggataaagc ttcattttgt taaaacctcc 360  
 aagccagtag atacatacgg taggcacgta ttatggtaga gacatacggc cac 413

<210> 186  
 <211> 397  
 <212> DNA  
 <213> Pinus taeda

<400> 186  
 aggtgaccgt cctgttgccct aaccgcgaat ccaaactcgac ttgggctgct tcctttcgtg 60  
 cagatatttc tggtttggac tctagttctt gtccttgga atcatgcttg agtgctgggt 120  
 agctgcctcc aagtttgggt gacaggccca ttctttacag cttctctctt ccgcttatga 180  
 cagagtaatg acaggaattc aacctgacgg atccgtctag ctctcacaag gttgggaccc 240  
 tgtcttcgag agggttatct cttgagactg ttgactatat tttggatgag ccctcagctc 300  
 tgtgtactat tgttcatgta ctggatactt tgtaaataat tttattctgg ttttaccctg 360  
 gggggggcat tttgactcct gggtttaata cggtcac 397

<210> 187  
 <211> 467  
 <212> DNA  
 <213> Pinus taeda

<400> 187  
 aggtgaccgt ggaacatgat gattagttct tctgtgggcc aggatgatta gttctctgtg 60  
 tgactgtggg ccaggatgat tagttctcct gtgacgactg ttggatagga tgattcgtct 120  
 cctgtggaca ggatgattag ttctcctgtc gaggcaccct acccatgcaa tttgggatca 180  
 tgggaagtac ctctcatctg atcaatgagt agggaaatgg ggtagggac cattagagta 240  
 ctatcgatgg acacatcggt gtatctaccg tcctatgcta ggacgacctc cattgttttg 300  
 gattagtgag agtggtatga cactctgaga ctgacttttg gtcagtggag gatgtatgat 360  
 acatcctcga tcatttcttc ttcttcatag ttcgagcaga gcagagcaca acaggccaag 420  
 tagtgcaggg tagtgcattt gatggctggg atagtagcga cggtcac 467

<210> 188  
 <211> 555  
 <212> DNA  
 <213> Pinus taeda

<400> 188  
 aggtgaccgt aaataagatg acccacatgg agtttggccc tagtttccaa ttttaacacc 60  
 gctctcaact agggagaact ccattcgctg atccatttgt ccgactatac tatctctgca 120  
 tcagtgcctt acactactct gcactgctct gctctactaa accatgaaga agaagaatga 180  
 ccgagaatgt ctcatgccat tctctattga cctgaagtta gtcctatatg aagagatgtg 240  
 tcatatcact cttattgacc caaagtcagt tttattgatc ccagatcaat atcacagaga 300  
 gtgtctcaaa ccactcatac tgatcccaga tcagtttcat tgatcccata tcaaggagat 360  
 catcctagaa tagggagtag agtagataca atgatgcac catcaatagt actctatggg 420  
 ccctaaccctc atttccctgc tcattgatca gatgagaggt acttccgatg agcccacact 480  
 gcatgggtag gatgcctcga catgagaaat aatcatccta tccacaggag acgaatcctc 540  
 ctgtcccacg gtcac 555

<210> 189  
 <211> 695  
 <212> DNA  
 <213> Pinus taeda

&lt;400&gt; 189

```

ctaggggaaga ctttaaaaagt ttgtaaaaact aagcatagct cttaaact gaagttaaag 60
acatgattgg aatgtgcaag tggttcagta tccaaatatt gaaggttgca gaatatgggc 120
tactgtgcaa acgagtaact ttatctatat ttccacaaga tcatacaatg ggaaacgtga 180
gataacaact gcatcgggtga accagaatag ttataaaaagt tcttgcaagt aaagggtgaa 240
taattgcatg gtgtgaatta agaattgacca tgtagagctg ctatacagac ttctcaaggt 300
tttatatttg aggagtgcgc gctattgatg ttgtgcaaaa atttcagaaa ttaattctgc 360
ggcattttatc aagggttggtt gagccattta aatagcaagt ttttggttct ccagtacttt 420
caggaaagca ggtagacga taaaatgcat cttcccaatt tactatatct ctgtttttaa 480
agattctctc aatgtcctta gcacgtggct ttcattattg ggaccaatga agatgtgtag 540
cagaggcatt acgttatgga atctctcacc aagaacactg ttttgggctt tagatagctc 600
ctagttataa atgctccagt gacaaacaca tcctaagttt ggggcaatta atgacgcctt 660
ttggtcattc tcctttgggt ttcaggcacg gtcac 695

```

&lt;210&gt; 190

&lt;211&gt; 144

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 190

```

tcccttttagt gagggttaat agatctatag tgtcacctaa atcgcgcccg ctctagaaca 60
gtggatccgc aagcaggata gacggcatat gcattggatg ctgagaattc gatatcaact 120
tatcgatacc gtcgacctcg aggg 144

```

&lt;210&gt; 191

&lt;211&gt; 185

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 191

```

ggtgcatcc taaacatgca agctttgagt ttgtaacttt gtagaagtgg acatttctaa 60
gttgatgta caaatctact gttggttgta ttgtcatccc ataaacaact gtttgatgag 120
atgttttttt aaaaaccaca tcataatatt tttaggcctt gtaaaaaaaaaa aaaaaaaaaa 180
aaaaa 185

```

&lt;210&gt; 192

&lt;211&gt; 167

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 192

```

attccaaact tttctttcaa gatgtacacc aacatcattg tccccaactt agtagacttg 60
actttttcacc aggtccaaag agaggggtgg tggaagcaga tttcaggctt tcgaataagt 120
atcaatgata taagcatcat ccccttgcca attgttctgg atcgcac 167

```

&lt;210&gt; 193

&lt;211&gt; 167

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 193

```

ggtgcatcc catcaggggt tgtgtttcta agaactcatt ccatgtttca aattcagcac 60
ttgatcttgt acatacccaa tttgttgctt gctactagct agtattgtct ttcagtttga 120

```

accattttttt tgagtaaatac gtgttttagtc tttggcaaaa aaaaaaa

167

<210> 194

<211> 470

<212> DNA

<213> Pinus taeda

<400> 194

|            |            |             |             |            |            |     |
|------------|------------|-------------|-------------|------------|------------|-----|
| ggtgcatcc  | gcattagaga | agcatcacagg | aaaaagaagt  | acctgcctct | tgatttgccg | 60  |
| ccaagaagac | tcgtgctatc | aggcgacgcc  | ttaccaagca  | tcaggcatca | ttgaagacga | 120 |
| gagacagaaa | aagaaagaga | tgtattttcc  | aatgagaaag  | tatgcagtca | aggtgtaagc | 180 |
| cacaggattt | gagctttcat | gcaatttttt  | tgttacttgc  | gggatgatat | tgcttatata | 240 |
| tttccgtcca | cgtttttggc | aaattccgat  | ttgcatcaga  | attcaagtta | tgatagtgtt | 300 |
| ctttcgcttt | tgagcagttg | atattgttta  | tcttttatatt | ctcttgaatt | gcaacatatt | 360 |
| ctaataaat  | gagtggatta | ttatattgtg  | gtatttccat  | gttgaactca | tataaatgag | 420 |
| cgtaatttga | gtggtagcgc | taggatattt  | acacttggca  | aaaaaaaaa  |            | 470 |

<210> 195

<211> 289

<212> DNA

<213> Pinus taeda

<400> 195

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| ggtgcatcc  | gtataggtag | tttggatgat | gaacgggcaa | agaaggcaaa | ggagtacagg | 60  |
| atggatcctg | taattcctgt | ttcagaaaac | agaaaatctg | caatataagg | atggctaact | 120 |
| tttcagctat | gaaaatatat | ggtgcagtgg | cactcatatc | agttgcagag | ttgtcaaata | 180 |
| acttttgtga | ataggaaagt | tgtcctcttt | tagagtgcag | aatcctgca  | atataagatg | 240 |
| gctaagtttt | tcagctatat | gaaaatatat | ggtgcagcaa | aaaaaaaaa  |            | 289 |

<210> 196

<211> 321

<212> DNA

<213> Pinus taeda

<400> 196

|             |             |             |             |             |             |     |
|-------------|-------------|-------------|-------------|-------------|-------------|-----|
| ggtgcatcc   | catatacaat  | tacatatatt  | ttcaacaatt  | cttttgttgt  | tatgaaaatc  | 60  |
| tattgaaata  | aattgaaata  | gtttgcatca  | tttatattatc | ggaattcgta  | tttatatatt  | 120 |
| aaattttctga | tgtctcaaata | ccttcgttac  | tgtaacgata  | tcattaatat  | aatgtgtctg  | 180 |
| caagtttatt  | gggcaaaaaca | aaattttattt | ttcggtcaca  | tcataagtgtt | atttttgggtc | 240 |
| acatcatatg  | caccatcaca  | ttaagcataa  | gcatatacag  | tagcgtaaaa  | atacaattat  | 300 |
| tgttgttgac  | taggatcgca  | c           |             |             |             | 321 |

<210> 197

<211> 188

<212> DNA

<213> Pinus taeda

<400> 197

|            |            |            |             |            |            |     |
|------------|------------|------------|-------------|------------|------------|-----|
| ggtgcatcc  | tagtcaacaa | caataatatg | tattttttacg | ctactgtata | tgcttatgct | 60  |
| aatgtgatgg | tgcatatgat | gtgacccaaa | aataaactta  | tgatgtgacc | gaaaaataat | 120 |
| tttgttttgt | ccaattagac | ttgctgtata | tgtctggagt  | cctacccttg | aaaattgact | 180 |
| tgtttccc   |            |            |             |            |            | 188 |

<210> 198  
 <211> 145  
 <212> DNA  
 <213> Pinus taeda

<400> 198  
 ggtgcatcc catatacaat tacttatatt ttcaacaatt cttttgttgt tatgaaaatc 60  
 tattgaaata aattgaaata gtttgcatac tttatttatc ggaattcgta tttatatatt 120  
 aaatttctga tgtctcaaact ccttc 145

<210> 199  
 <211> 151  
 <212> DNA  
 <213> Pinus taeda

<400> 199  
 ccactgcacc atatattttc atatagctga aaaacttagc catccttata ttgcagattt 60  
 ctgttttctg aaacaggaat tacaggatcc atcactgtac tcctttgcct tctttgccgt 120  
 tcatcatcca aactacctat acggatcgca c 151

<210> 200  
 <211> 254  
 <212> DNA  
 <213> Pinus taeda

<400> 200  
 agagccttct tgcagacaat ccgtgaaaac atggctatac aataaaaatt cccagtttga 60  
 attctaaaga aaactgttca atatttgaag gcctctgata tcacagagac tgatatttaa 120  
 tggaaattca tacaatgag gagagcatgt agcaacacta gaagctttgg cataaagcac 180  
 cagataaatt cataagaact aaatccataa gaaggatctc tcgttcacca gtcacaatca 240  
 cactcggatc gcac 254

<210> 201  
 <211> 363  
 <212> DNA  
 <213> Pinus taeda

<400> 201  
 ggtgcatcc ctggccctga taacttttgt tgcaatggaa aatgcagtac taggtgagaa 60  
 atgctaaagc ccgcccggag cgggtgcatga agtactgcaa tatttgttgt agtaaattggc 120  
 tggttgtgtt cccagtggtc actatggcaa caaggacgag tgcccctgct acagagaatg 180  
 aagtccgcag ccggcaagcc caagtgtccc tgatcttagc acttcagtc agtcgccact 240  
 tcttttattc tcttttttta taaaagtgc gaggccgttt ttcttgtgct tgggtgccata 300  
 tgtagagcgg tggctacttc tcctgtgtta ggaaatgttg cagtactaat aatagaactt 360  
 ctt 363

<210> 202  
 <211> 162  
 <212> DNA  
 <213> Pinus taeda

<400> 202  
 ggtgcatcc aataaagata tactttgcaa caataatcaa aatatcatta tgcaaagttt 60  
 aagatcaaaa tagaatgcaa caaaaaaatg gttgtaacat aggaaccaac aatgttgcat 120

162

<400> 203

|            |             |            |             |             |             |     |
|------------|-------------|------------|-------------|-------------|-------------|-----|
| ggtgcgatcc | acaagtaaga  | taattgagta | tatat tcaag | atgcaaatat  | ttcattagga  | 60  |
| ccactcataa | agttatcaat  | gattcacaaa | gagacctcct  | gacctctctc  | aaaagtgggtg | 120 |
| gcaacacaa  | actagtgtag  | tttttactat | acctcaatga  | aactaccatc  | ctaactgatg  | 180 |
| ccataatctt | ctggttatata | ttaccaa    | ttatgagatg  | attgatccat  | aaacactcca  | 240 |
| gaacacatag | tcattccaa   | gaacctttgc | ttgaatatgg  | accccttaa   | ttcaggtact  | 300 |
| tqctactcca | ataaattqct  | taatctctcc | accgataacc  | acaqttttgga | tcqcc       | 355 |

<400> 204

|            |            |            |            |            |             |     |
|------------|------------|------------|------------|------------|-------------|-----|
| ggtgcatcc  | aggacatgag | gccgagtttg | ccattgtgat | atgattgagg | aagtccagtc  | 60  |
| tcaaaattag | gtttatcttg | atgtttgaca | agaaatatag | aagggcatga | tgaatcaaga  | 120 |
| accttttcca | aatctgttac | tgcaaccaat | ccaatgacat | aataacgcca | atgggttggtt | 180 |
| cctgtgatga | cataataaat | tggattaaat | taataacatc | cctaatgcca | tgtgggttagc | 240 |
| tgcacatca  | ccgtatccat | cgagtgttca | atttttggga | tgtatgtatc | aaaaaaaa    | 297 |

<400> 205

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| aaatatTTTT | caatacaacg | ccatgtgaca | TTTTTgtgct | tcttgTTTT  | gatacatact | 60  |
| tccaaaaact | gaacactcga | tggatacggg | gatgatgcag | ctacagccat | tgcattacga | 120 |
| tgTTactaaa | ttaaataaat | ttattatgtc | atcacacgaa | cccaaacaat | agcgctatat | 180 |
| gtcattagaa | tggTTgcagt | tacagatctg | gaaacagatc | aatgaatcat | catgccctct | 240 |
| atatctcttg | tcaaacaatc | agataaacct | aattttgagg | actggacttc | ctcaacatat | 300 |
| cacaatggca | aactcggcct | catgtcctgg | atcgcac    |            |            | 337 |

<400> 206

|            |             |            |             |             |            |     |
|------------|-------------|------------|-------------|-------------|------------|-----|
| ggtgcgatcc | gtataggttag | tttggatgat | gaacgggcaa  | agaaggcaaa  | ggagtacagg | 60  |
| atggatcctg | taattcctgt  | ttcagaaaac | agaaaatctg  | caatataaagg | atggctaact | 120 |
| tttcagctat | gaaaatatat  | ggtgcagtgg | cactcatatc  | agttgcagag  | ttgtgaaata | 180 |
| acttttgtga | ataggaaagt  | tttcctgttt | tagaatgcag  | aaatcctgca  | atataagatg | 240 |
| gctaagtttt | tcagctatat  | gaaaatatat | ggtgcagcag  | agttgtcaat  | ataaacttgt | 300 |
| gaatagggaa | gttttggcaa  | aaaaaaaaaa | aagaaaaaaaa | aaaa        |            | 344 |

<210> 207  
 <211> 349  
 <212> DNA  
 <213> Pinus taeda

<400> 207  
 ggtgcgatcc tcgttgtgaa gacgtagtga tggaaaggct atgtttgtag gagacataat 60  
 tataggagtt tctttattat aataaccaag aagtccgac ctggggggcgt tgagtatata 120  
 gtcagtcttt ggtaatttgg tgtggtgctg tttgacctgc ctttcctttg gagcaatgat 180  
 ccttgaggat ggaagagggt atgttgaggc tcaagagatg attgtttgag ttgtggaaag 240  
 caaaagggtt ccagatgtag tcagatagta acttctatgc ttttaataaa atttagtctg 300  
 tggggcgatgc ccctttttgc tggcaaaaaa aaaaaagaaa aaaaaaaaaa 349

<210> 208  
 <211> 317  
 <212> DNA  
 <213> Pinus taeda

<400> 208  
 ggtgcgatcc gtataggtag tttggatgat gaacgggcaa agaaggcaaa ggagtacagt 60  
 gatggatcct gtaattcctg tttcagaaaa cagaaaatct gcaatataag gatggctaag 120  
 cttttcagct atgaaaatat atggtgcagt ggcactcata tcagttgcag agttgtgaat 180  
 ataacttttg tgaataggaa agttttcctg ttttagaatg cagaaatcct gcaatataag 240  
 gatggctaag tttttcagct atatgaaaat atatggtgca gcagagttgg aaaaaaaaaa 300  
 aaaaaaaaaa aaaaaaaa 317

<210> 209  
 <211> 389  
 <212> DNA  
 <213> Pinus taeda

<400> 209  
 ggtgcgatcc caggagaata ttagtttcat gtgttgctat cattttcttc aatatgcagg 60  
 gcaaccattt gaatgaaact attcctttcg aatttcaaaa acttaatagg ctaacttatc 120  
 tatctggagc cgattttcat tgacgagtaa cctgtaagct ggccagcaaa agccaacaga 180  
 tgttcagctt gttggaacca gttgaagatt gtaatagaga tgggtgaataa tcgcggacgg 240  
 ctgcggcaat ggaatatttg ttgcatcatc atcaaggggg tatgaattcc aaagaacttg 300  
 ttgattgaaa ttccaagca aaattctgtg aaatgaaaaa tttattgaga ccattgggca 360  
 aaaaaaaaaa aaaataaaaa aaaaaaaaaa 389

<210> 210  
 <211> 242  
 <212> DNA  
 <213> Pinus taeda

<400> 210  
 ggtgcgatcc gactgtgata tgtgactggt gaacgagaga tccttcttat gaattaatct 60  
 ggtatcttta tgcgaaagct tctagggttg ctacatgctt ccatttctaat atcagtctct 120  
 gtgatatcag aggccttcaa atattgaaca gttttcttta gaattccaaa ctgggaattt 180  
 ttattgtata gccatgtttt cacggattgt ctgcaagaag gctctttggc aaaaaaaaaa 240  
 aa 242

<210> 211  
 <211> 319

<212> DNA  
<213> Pinus taeda

<400> 211  
 ttttttttatt tttttttttt ccaacgagat cactgtcatt gttcaataac tatatgccaa 60  
 agagccttct tgcagacaat ccgtgaaaac atggctatac aataaaaatt cccagtttgg 120  
 aattctaaag aaaactgttc aatatttgaa ggcctctgat atcccagaga ctgatattag 180  
 aatggaaatt catacaaatg aggagagcat gtagcaacac tagaagcttt ggcataaaga 240  
 caccagataa attcataaga actaaatcca taagaaggat ctctcgttca ccagtcacat 300  
 atcatactcg gatcgcacc 319

<210> 212  
<211> 271  
<212> DNA  
<213> Pinus taeda

<400> 212  
 ggtgcgatcc gactgtgata tgtggctggt gaacgagaga tccttcttat gaattaatct 60  
 ggtatcttta tgcgaaagct tttaggggtg ctacatgctc tcctcttttg tatgaatttc 120  
 cattctaata tcagtctctg tgatatcaga ggccttcaaa tattgaacag ttttatttag 180  
 aattccaaac tgggaattta ttgtatagca atgttttcac ggattgtctg caagaaggct 240  
 ctttggaata aaaaaaata aaaaaaaaaa a 271

<210> 213  
<211> 30  
<212> DNA  
<213> Pinus taeda

<400> 213  
 tcccaaaggc aattatacat ggatcgcacc 30

<210> 214  
<211> 517  
<212> DNA  
<213> Pinus taeda

<400> 214  
 ggtgcgatcc ccactgcaga aagatgagcc agtaccctga aattttgctg ttgtccatgc 60  
 ctgggtcacg gaggaagaa cggcacggtg caatatgatt ttgctacata caagttccaa 120  
 gagtggatgc agacagtgtt ggccatggct gattatttgc aggtgactaa tgctcttttg 180  
 gttatcctta ccatcatcat ctctctgcca ttcttttgta cctcgggtatg gagacgaaca 240  
 cccacttttc aaagtttgca gaggaagcat gtattcataa caggaggatc aagcggcatt 300  
 ggccttgaga ttgccaaaga ggctctttca cagggttctt acgtgacact ggctcaaga 360  
 aatctttcta aacttcgtag ggctgttgaa gaaatcatcc aagaagtgga gtgacgacga 420  
 gacaagatta atatcaagg aatataccct gcaaaatgtt gtctggaata caatccaaaa 480  
 ccaatttagc aattaacca ttggcaaaaa aaaaaaa 517

<210> 215  
<211> 734  
<212> DNA  
<213> Pinus taeda

<400> 215  
 ggtgcgatcc aagtgcggtt ttcttccttt ggcagttctc tgaactgttg agagaatttg 60

```

agtaggataa cgacaataat tactatgctc acaagcccag acaacacgaa tagactccct 120
tccgtgcgct gccttccaga ggacgcagca gctaaaatct cggcctgact caccacatat 180
atattttaata gcttgtatat gccatatgaa ctgttagcat gatctccctc taactgcgaa 240
ttgtgttgct gtaaaactaat cccaaaggat gtttactctg ttgcttttcc aactgctgat 300
ggatttcgct catacaatga cccgagagca ccataaacct acccagcggt gtggcctatg 360
acccatagct ttttggttcgc acagcaattg aagaccggct acaggagatg actaatgcac 420
ttccgagaag gtttcaccgc gaatgacagg gaaggacaag gcagagcagc aggccaagac 480
agcttttagtc gcagaagttc aagcagatct agattcatag taaatggaag ttctacacta 540
gttacaaatt taaaaacgta cctgcatgga ctacacgggt tatttacgag tgccacttgt 600
ctcattgttt tccatcagat gtctgctgga ttgtggtagt gtgttctacc gtatcgggtgc 660
gggttttgta tattgtgcgt cgacagagtg acagggtggtg attttactgg caaaaaaaaa 720
aaacaaaaaa aaaa 734

```

```

<210> 216
<211> 664
<212> DNA
<213> Pinus taeda

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```

<400> 216
ggtgcatcc tagtacaggc gtttggaaaca gagtggagaa tatgtggagt attgggggat 60
gcccccggtc gtgtgttgct gcgtttggga atttgtatct cttccatagg caacaagtga 120
tgtcttataa tagtaaagag aatgtttggg aagtgggtggc atctcttcct ggagacatga 180
atattgttac tttgcgcaac agtgtggtgt gacaagatat ttgtgagcgg ttgtgcttgc 240
agtggcggcg atcagggtgtg ttacatgctg gacaaatctt gggcgtgggc tcctattgag 300
aggtcacatg agtttgaggg ttttgctcag tctgcaataa ctgtagagat atgagcaaat 360
tctgttgggt tcacttaatt ttgggattat tatagtgcag aggggagccg ggaagtttca 420
gtgtacagtg atgggcacca catgttgcca gcattggggg tgccctgtga atatgatttc 480
tataagtccg gatatttaaat atctaggcca tctatctcat ccagcctctg attgtgtctg 540
tactaaatat atcctgtata ttcgtgatcc ctgggttttga agtgagcaag ttttagtgga 600
agaggatttt tattaatat atataaagtt tctgtattca gggttttggc aaaaaaaaaa 660
aaaa 664

```

```

<210> 217
<211> 422
<212> DNA
<213> Pinus taeda

```

```

<400> 217
ggtgcaatcc gccataagag aggcatacag gaaaaagaag tacctgcctc ttgatttgcg 60
tcccaagaag actcgtgcta tcagggtgacg ccttaccaag catcaggcat cattgaagac 120
tgagagacag aaaaagaaag agatgtatct tccaatgaga aagtatgcag tcaagggtga 180
aagccatagg atttgagctt tcatgcaatt tttttgttac ttgcgggatg atattgccta 240
ttatatctcc gtccacgttt ttggcaaatt ccgatttgca tcagaattca agttatgata 300
ggtgttcttt cgcttttgag cagttgatat tgtttatctt tatttctctt gaattgcgaa 360
catattctaa tgcaatgagt ggattattat attgtggcaa aaaaaaaaaa aaaaaaaaaa 420
aa 422

```

```

<210> 218
<211> 239
<212> DNA
<213> Pinus taeda

```

```

<400> 218
gcggacgcct caggatagcg ttaggggttg cttaggatag cgttagctct gccttctaag 60
gttgccgtct tatcctccag cgtctagggc ttccactcct aggatttctc ttccactaaa 120

```

```
<210> 219
<211> 303
<212> DNA
<213> Pinus taeda
```

```
<210> 220
<211> 273
<212> DNA
<213> Pinus taeda
```

```
<210> 221
<211> 364
<212> DNA
<213> Pinus taeda
```

```
<210> 222
<211> 357
<212> DNA
<213> Pinus taeda
```

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| <400> 222  |            |            |            |            |            |     |
| caatctgtct | gcaattgata | ttattgcatc | cagtaaacca | gatacacatt | caccacaaca | 60  |
| ttagagactc | tagaagttcc | tttggcgaca | ggcaaaactc | atgattacag | ataattggag | 120 |
| tttcctctaa | ccagagtcaa | acgatctaaa | gggatttgtc | tagtcctcca | ttccctcatt | 180 |
| caatgaggcg | atggcttatg | ccgtgacaac | agtttctata | gttgcatccg | ctcctcttga | 240 |
| tcccacaaca | tttttggtgt | tctctgcatc | ttcttcctcc | catatctctg | gcagggcttc | 300 |
| tctaattgtt | tgaatacttg | caagggcaaa | atctgctccc | tctgttcgga | tcgcacc    | 357 |

<210> 223  
 <211> 222  
 <212> DNA  
 <213> Pinus taeda

<400> 223  
 ggtgcatcc tctcagttac gagctcaatt tgcaccaggg gtctcggcaa attgaggatc 60  
 atgagaagca gggatatgcc ttgaatgccc tgaagccagg ggagtctcag ggcaatcacg 120  
 aatgaaacct gacaaacctt aagaaaaccc ctagagcgtg ccctgcagaa agggaattct 180  
 ttttgaggcc ggcggtcttt ctgtcgtctt ctgcagccg ta 222

<210> 224  
 <211> 225  
 <212> DNA  
 <213> Pinus taeda

<400> 224  
 ggtgcatcc agcaagagaa cgaaaaaggt atgagaatct atgaaatatt tgtacatcac 60  
 tgtattcata tgagggcctt tttttacaat gcggtagggg tgtttggaga attagaacct 120  
 gattaaaatg tagatggatt caagctttta gtgaaatgag gctcggaacg caagtatgct 180  
 gtccactttg agactcattc ttctatagta tctgaagcca aagcc 225

<210> 225  
 <211> 415  
 <212> DNA  
 <213> Pinus taeda

<400> 225  
 ggtgcatcc catgggatag ttgcaaaaaca caaaatttg ttgtgaaaga agagagacac 60  
 gcacagacaa ccatatgatc tttttttttt tttttttttt tttttttttt tttttttttt 120  
 ttttcacaac tctgctgcac catatatatt catatagctg aaaaacttag ccatccttat 180  
 attgcaggat ttccgcattc taaaacagga aaactttcct attcacaaaa gttatattca 240  
 caactctgca actgatatga gtgccactgc accatatatt ttcatactg aaaagcttag 300  
 ccagccttat attgcagatt ttctgttttc tgaaacagga attacaggat ccatcactgt 360  
 actcctttgc cttccttgcc cgttcatcat ccaaactact atacggatcg cacca 415

<210> 226  
 <211> 229  
 <212> DNA  
 <213> Pinus taeda

<400> 226  
 ggtgcatcc tgcgagagcc gagggttcat tttcctttcg acaacgacgt tcagtggcga 60  
 ccagagtttc ccaatcactt cagcgattct attccttcgt tgtaataaag ctttaaggaat 120  
 ccatgcttta ttccttgga ggtttgaata tttatatatt ttggcattaa tgctatatac 180  
 atctatacta attttgggtt gttctaaact tgttttgaat aacttaaact 229

<210> 227  
 <211> 219  
 <212> DNA  
 <213> Pinus taeda

&lt;400&gt; 227

```

ggtgcgatcc atggcaaaga gctcgttcaa gcacgatcat cctccagaga gaagacaagc 60
tgaagcttct cggattcgag aaaagtatcc ggacaggatt cgggttattg tggagaaggc 120
tgagagaagt gagatacctg atattgataa aaagaaatat ttagtcccag cagatttgac 180
tgttgggcaa tttgtttatg ttgtccgaaa aaaaaaaaaa                219

```

&lt;210&gt; 228

&lt;211&gt; 405

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 228

```

ggtgcgatcc cctgtattct tgaaagggtt ataacggaag atagcatttt gctcagattg 60
tagacagtct gcatgatttg tcaatactac tatttcgcat tatttggtta tactactaat 120
ccttgtactc atctagacta ttttaattatt aaattctaca gtttctttct cctagatggc 180
aaacaatatg aataaaaatgc caatagtttt ggaactactc cattaagagc tttagatgat 240
tatcattcat catttgccctg ttttgaatcg taaatgaatg tgtcacggtc ttcttttctg 300
ttagtctcta tgctttcatc agaagagtct aagccagtta ctggaagcta tttgtcatct 360
ctttaaacat tgtttccgtg ccaaaaaaaaa aaaaaaaaaa aaaaaa                405

```

&lt;210&gt; 229

&lt;211&gt; 329

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 229

```

ggcagaactt ccaaagtcta gtatttgatt aactaatatg atgaagacac tcagtctata 60
acatgacgcc agaaatcaga ccatatgcat gataactagc acgattaata tacaattcgc 120
aacctttaat acactaaaaa cgtttactgt atagtccact cagaacattt cgatagtatt 180
gtcagatcga cttatttagc tcatattcag caatctgaac tgtacgatgc ggctcattca 240
agggcatttg ggtttgccct tggcattctt catatcccga tagcaaggac acgcgttctt 300
gttgccatat gtccctgggg gatcgcacc                329

```

&lt;210&gt; 230

&lt;211&gt; 354

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 230

```

ggtgcgatcc acattggcca ggccgggtatt caggctcggca atgcctggtg ggagctttac 60
tgtctcgagc acgacattca gcctgatgga caaatgccaa gtgacaagac cgttggcggt 120
ggagatgatg cattcaacac atttttcagt gagacagggt cgggtaagca tgttcctcgt 180
gccgtgtttc tggatctgga gccaaactgtc attgatgaag ttcgaaccgg cacatatcgg 240
cagctttttc acccagagca gctgatcagt ggcaaagaag atgccgccaa caactttgct 300
cgtggccatt ataccattgg taaggaaatt gtggatctgt gcttggatcg cacc                354

```

&lt;210&gt; 231

&lt;211&gt; 271

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 231

```

ggtgcgatcc cagcattgga tgcatttcta gcacaaagcc atcttgacta aaatagcact 60
gcgggcaact gcagtccata actttcagag cattgttgct gcctcaattg tataccaatc 120

```

```
<210> 232
<211> 370
<212> DNA
<213> Pinus taeda
```

```
<210> 233
<211> 328
<212> DNA
<213> Pinus taeda
```

```
<210> 234
<211> 157
<212> DNA
<213> Pinus taeda
```

```
<210> 235
<211> 334
<212> DNA
<213> Pinus taeda
```

```
<400> 235
ggtgcgatcc attaactaga ttaacgataa cattcctctg catccaatcc aatgctcatc 60
taaatctact tctacttaga tctctgcttc atctttctcc acctcctcat ccatttctgaa 120
atattaattt ctgcatagat tttgttaggg tctagtaatc attttcatga atttaaattct 180
gttctagtct cttattatta tgctgcttat gctagcatca gaacctgtgt ataattcatt 240
catgtatata ttggattaca caaattatac ggatgccaga aaaaaaaaaa aaaaaaaaaa 300
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa                                     334
```

<210> 236  
 <211> 199  
 <212> DNA  
 <213> Pinus taeda

<400> 236  
 cttgaagctg atatgtttga acccgaaatt ttgttaccca actccagtgt acattgtgtc 60  
 actgtcaaag agaacatgag agctgcatgc aagcttttgc atgatagata gattactgat 120  
 caccgaacat ttcttactct actttcctct cctatcccca gtgatttttg ggcattttct 180  
 atacccttcg gatcgacc 199

<210> 237  
 <211> 220  
 <212> DNA  
 <213> Pinus taeda

<400> 237  
 ctcatgaaca gcaatatgat gcattcctct tatacacatt tcatatatgt tcacccttgc 60  
 cgtcatggct actctaagaa gagcaaaaca gaccattga atctttacac gcgcttggtt 120  
 atatgaatac aaataattta ggcgtttctt tacacgccct tgtttacatt aatacaagtg 180  
 atttaggcgt tgttaccaga atagtgccac ggatcgacc 220

<210> 238  
 <211> 555  
 <212> DNA  
 <213> Pinus taeda

<400> 238  
 ggtgcatcc caagatagaa aagggaacta tgggtctcgag gagtgtcagg tgctacagat 60  
 cacaatatac ataaggggtct gatagtagta ctcggcccaa tgtttgaggg ctctaactaa 120  
 ggaggatcaa ccgtaccctt agccgtaaaa cccgactacc ctatcgtagc ggcgagtaat 180  
 ctctctgagt gttgttctcg gtgtatcgta gcagcaacac ggctgacggg ttatctatgg 240  
 tgaggtttca aaggagctag ggggcttcca atatacccag agggacttg gaagacagtt 300  
 tatacgcggt tctgtctaata gcgctactac tcgaaggggt acccacaggg gttacaagag 360  
 agtgcaacaa gcatgaccac cccttgtatt tcttgcatgt atgcctcccc aaatccgcag 420  
 gtttatgcgc tcattgacag attccgtggg ttaaagatgc cggaacatgt ctctagccaa 480  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 540  
 aaaaaaaaaa aaaaaa 555

<210> 239  
 <211> 419  
 <212> DNA  
 <213> Pinus taeda

<400> 239  
 ggtgcatcc tcctaacctg caatgtcctt cctgcaacct gcaattattc aacagaaatt 60  
 aggtttattt ttctttttgt cttttcttct tttttttttt tttttttttt tttttttttt 120  
 ttttttaagt aaacgaccat ttcaaacgcc atttcaaagt ctatgaatta atgttgaatt 180  
 aatgttagca ttaagtctta aacattttat gttaaggcat atatatcggt ccaactactc 240  
 ttacaataca cctgcggtgt actcctgcca ccgcatgtac caccgttaca tgtacgcctg 300  
 ccagcacatc taacaggtgc caactccttt gaactcatcg tcgccatttt tgtatgcata 360  
 tttgaactca tcgtcgccat ttttgggtatc ttcacatatg gccagtccag gatcgacc 419

<210> 240  
 <211> 129  
 <212> DNA  
 <213> Pinus taeda

<400> 240  
 ggtgcatcc aaggagtggg cgtgcaatgc gtggaagata gccaccactg cagggggcgtg 60  
 gcatgctgcc gtgcttccca cagggagatc aacacctgca cctccgcctc cttccgcggt 120  
 taccacgag 129

<210> 241  
 <211> 349  
 <212> DNA  
 <213> Pinus taeda

<400> 241  
 ggtgcatcc agccacagaa agattggttt actcgataat tgaacggtag actttgtgca 60  
 ggttttagatt gtgtacatgc tgatcagtat tgtctacacc attttcaatc ttgttttagtt 120  
 ctatggtaat ttatgtaaca aattcagcga tgttggggaa attggtcaca tcagctttgt 180  
 gcctatatat ttcaagtaaa tcaggggatc cattaatact gcttttataaa taattggggc 240  
 aaagtgtgtg gatgactgct tcagcgggaat acgtgctttt catagtgtg tatgacattt 300  
 tgttgaatat gaattttctt tgtgatacag ttgcgcgaaa aaaaaaaaaa 349

<210> 242  
 <211> 316  
 <212> DNA  
 <213> Pinus taeda

<400> 242  
 ggtgcatcc atgccaagag ggtgaccatc atgcccagg acattcagct cgctcgccgc 60  
 atccgtggag agagggcata aacagtcagt cagatccaat ggtgtgtttt cacaccacca 120  
 tatgtttctt ttactaaatt tgtaggtcc cttcggtggg tcttttcttt ccccgattt 180  
 tagtattttg ttgttcttct gagtttcatc attgcaagta caagatgcag aattgatgg 240  
 tattgggact tggagactgg ttattgctat gtagagtatt tatattagac aggtttcact 300  
 tgaagatata aaattg 316

<210> 243  
 <211> 188  
 <212> DNA  
 <213> Pinus taeda

<400> 243  
 ggtgcatcc tcatgtgtta taaccgaagt ttgcgggatt cagatgggtca gtatcttaaa 60  
 tgtccaactt tcggtacgaa tgggggtgcgt tctgaaacgt gccacgaaag aggtgttcag 120  
 gatctgtctg aggcatcttt ccggtatttt ccacttccat ggtatgagaa actttcgtct 180  
 tgttgag 188

<210> 244  
 <211> 170  
 <212> DNA  
 <213> Pinus taeda

<400> 244  
 aggagacaca actttacgaa aaagttcaat ctggagtctt ctaagttttt cagactctct 60

aaatatgaaa agcgccgagt ttctcctata ctggactcgt taaaatttta cagtaaagga 120  
cctgttctat taaaaacagg aacggaccgc tcctccttag ggatcgcacc 170

<210> 245  
<211> 164  
<212> DNA  
<213> Pinus taeda

<400> 245  
ggtgcatcc agcaagagaa cgaaaaagat atgaagaatc tatgaaatat ttgtacatca 60  
ctgtattcat atgagggcct ttttttaciaa tgcggtaggg ttgtttggag aattagaacc 120  
tgattaaaat gtagatggat tcaagctttt agtgaaatga ggct 164

<210> 246  
<211> 187  
<212> DNA  
<213> Pinus taeda

<400> 246  
ctcaacataa agtcatagca tagcaccaca ccacagtcgt catcatttgt tttgttcacc 60  
accgaagggg ctcttttacag cgtccttgaa gccctgtata gcacccttcg ccttgteccc 120  
cgctgttgg aagaaagagc cagtttggtc tttcccctct tgggcttttc ccgtgatgga 180  
tcgcacc 187

<210> 247  
<211> 471  
<212> DNA  
<213> Pinus taeda

<400> 247  
ggtgcatcc catgggatag ttgcaaaaaca cacaatttg ttgtgaaaga agagagacac 60  
gcacagacaa ccatatgac tttttttttt tttttttttt tttttttttt tttttttttt 120  
tcgggaccaa atatttttca atacaacgcc atgtgacatt tttgtgcttc ttgtttttga 180  
tacatacatt ccaaaaactg aacactcgat ggatacgggt atgatgcagc tacagccatt 240  
gcattacaga tgttattaaa tttaatcaat ttattatgtc atcacaccaa ccaaacaat 300  
agcgctatta tgtcattaga atgggtgcag ttacaagatc tgcaaacaga tcaatgaatc 360  
atcatgcccc tctatatctc ttgtcaaaca tcaagataaa cctaatttta ggactggact 420  
tcctcaatca taccacaatg gcaaactcag cctcatgtcc tggatcgcac c 471

<210> 248  
<211> 265  
<212> DNA  
<213> Pinus taeda

<400> 248  
ggtgcatcc tggactggcc atatgtgaag ataacaaaaa tggcgacgat gagttcaaatt 60  
atgcatagaa taagcgttct gtaattggaa cggccatagg agttggcacc tgtagatgt 120  
gctggcaggc gtacatgtaa cgggtggtaga tgcggtagga ggagtagacc gcagggtgtat 180  
tgtaagagta gttggaacga tatatatgcc ttaacataaa atgtttaaga cttaatgcta 240  
acattaattc aacattaatt catag 265

<210> 249  
<211> 417

<213> Pinus taeda

|            |            |             |            |            |            |     |
|------------|------------|-------------|------------|------------|------------|-----|
| ggtgcgatcc | catgggatag | ttgcaaaaaca | cacaaatttg | ttgtgaaaga | agagagacac | 60  |
| gcacagacaa | ccatatgatc | tttttttttt  | tttttttttt | tttttttttt | tttttttttt | 120 |
| tttttttttt | tttttttttt | tttttgtttt  | tttttttttg | tgaagtgaca | aaatctaaac | 180 |
| caaagattaa | aaggctttgg | cttcagatac  | tatagaagaa | tgagtctcaa | agtggacagc | 240 |
| atacttgcgt | tccgagcctc | atttcactaa  | aagcttgaat | ccatctacat | tttaatcagg | 300 |
| ttctaattct | ccaaacaacc | ctaccgcatt  | gtaaaaaaag | gccctcatat | gaatacagtg | 360 |
| atgtacaaat | atttcataga | ttctcatatc  | tttttcgttc | tcttgctgga | tcgcacc    | 417 |

<211> 167

<213> Pinus taeda

```
ggtgcgatcc caaccaggtg tccatgcaat atatggtgag catcaagttt gaggtgggtg 60
attgaaagtt acaaattggt gacatctgaa gtctcattca gttatgtttt tgtatataaa 120
aaccataacc aattttgtat ataagatcca taatcaattt tggccaa 167
```

<211> 236

<213> Pinus taeda

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| gttttcaaga | agagcctgac | ggtttcctcg | gcgggatgac | ggaaacagga | agcggccggc | 60  |
| cggttccgga | ccctccgcag | gcggagcata | gcattttgcc | ggaaccaccg | catgtcctgc | 120 |
| acccaacatc | cgcgtctgac | cagcggaggc | acatgcaccc | aaccctcccg | gttccattgc | 180 |
| acctcgggca | gcgcggccac | ccgcgggcca | tcggcttata | catcatggat | cgcacc     | 236 |

<211> 409

<213> Pinus taeda

|            |            |             |            |            |             |     |
|------------|------------|-------------|------------|------------|-------------|-----|
| tgggcgaatc | atatggcttg | cattttcatt  | gtaacatgta | tacgttaagg | attatcataa  | 60  |
| tgctccaaa  | accttgatc  | ttcgtccttg  | ccacaataca | tccaggataa | ctaattggaag | 120 |
| cttgacatgt | cttcaccagt | aataatatat  | caactataat | acatgccatt | ctttttatcag | 180 |
| ttttgaacaa | aataatcgat | ttgcattctt  | gacaaagaac | ctcgcgcata | aaaacaaata  | 240 |
| aattctcata | atgcctccca | aaccttgtag  | tctggggcct | cagtcgccac | aatccattta  | 300 |
| agaggaattt | ggggggtgat | agtgccccagg | tccaatcttc | atgaaaattc | gttcatcaat  | 360 |
| ctttgctgca | tacacatctc | tctctgcttt  | cactatctgg | gatcgcacc  |             | 409 |

<211> 356

<213> Pinus taeda

ccactataat gaacattgat attacaaata taatatacat taatattaca attcaaataca 60

ttgacaatga gcaggcacta cttgcagtgc tttggaattc agacttctga tttgcaatta 120  
 attctttag acgcttttct gggagggcag gttttccgct tcagagaaaa ccacgtacaa 180  
 aacgatatta aataaaaaata gacacataca aaaaataactt cattttttgc tctttccatt 240  
 tggtttcttc ctctatctcc attttggagg gcttaaataga cttcaaattt aaaagtcaac 300  
 aacagagtgc agcacattct attagctttg ctgtaaatat ctgattggat cgcacc 356

<210> 254

<211> 375

<212> DNA

<213> Pinus taeda

<400> 254

ggtgcatcc gcattaagag aagcatacaa gaaaaagaag tacctgcctc ttgatttgcg 60  
 tcccaagaag actcgtgcta tcaggcgacg ccttaccaag catcaggcat cattgaagac 120  
 tgagagacag aaaaagaaag agatgtattt tccaatgaga aagtatgcag ccaaggtgta 180  
 aagcacagga tttgagcttt catgcaattt ttttgttact cgcgggatga tattgcctat 240  
 tatatttccg tccaagtttt tggcaaattc ctatttgcac cagaattcaa gttatgatag 300  
 gtgttctttc gtttttgagc agttgatatt gtttatcttt tatttctatt attaatcttc 360  
 taagttggat cgcac 375

<210> 255

<211> 189

<212> DNA

<213> Pinus taeda

<400> 255

aaacagacaa atatagaaat atgcatacat aagtccttgc agaattgttt tccgcaatga 60  
 attctgggtt atggcaacat tacctactta gtactaacc ctaagattatt ttcagctctg 120  
 ataagtggca tacgtgtatc aatcttgcac gactctatcc ctgttttaac cttttgttgg 180  
 gatcgacc 189

<210> 256

<211> 105

<212> DNA

<213> Pinus taeda

<400> 256

gtggaagctt cattgtaaaa cactactggt tttgagagaa caaaatatat acgctagccg 60  
 agtggattat aacaaaatat aggttttatt ctattggatc gcacc 105

<210> 257

<211> 348

<212> DNA

<213> Pinus taeda

<400> 257

ggtgcatcc catacattaa catagccatc acagcccccga gtggcaaaag taccatagct 60  
 gcaaaaacat tataaaacta acattcctac aaggaaataa aatacaacta aaaaagcaag 120  
 caataggcat taggggaggg agaagctaaa actattaagc aacttacatg ggatgaaagg 180  
 caattgcgtt tactggataa acagtatctc tgccagcctc tgacttgcca tgacatttaa 240  
 aggcataattt tttaagcttg accagcttca gatacatcat aatactccat agccatgcga 300  
 gcttccacag aactaagggg caaacctgt tccatttggga tcgcatca 348

<210> 258  
 <211> 476  
 <212> DNA  
 <213> Pinus taeda

<400> 258  
 ggtgcatcc aactgagaag ggtgtttggt ggaaagatga caccaagtgg gttctctatt 60  
 ctccagagga tgcaagaaaa attctgagag caaagaagaa tggggactca aatattacgt 120  
 tgggttctgt taaatctgcc aagtaccctt caggaaagct ttatgccata gacctggtgg 180  
 ccatgaagca aaccaatgta aacactggct tctccagaga tatcaaaatc atcaattctt 240  
 gccctactga tgatcaggaa gatgtagagt ctgatgaaga agatgaatta ttcacattct 300  
 ctcgctctgt caaagttgaa gtgattaacc agagcaggaa acctgataag attgtcaaga 360  
 tggttccttc tgtcactgta gaccttgaga aattgacttc tcaatacctc ctggaggatg 420  
 agtgcaattt ggttctaaag cttcccaggg ctgcagctgc ccaatcggtat cgcacc 476

<210> 259  
 <211> 317  
 <212> DNA  
 <213> Pinus taeda

<400> 259  
 ggtgcatcc agctaataca acttaatgga gagcccttcc caggaagagt aaatggtagt 60  
 cacttgaagc cctacacggg tgggctggcg gtctgactaa ctgaccaaaa catagtcttc 120  
 gcgacccaac aagccagaca gaggtgtggg actataagca caagtactag aagctagcat 180  
 caaagtagag aattaagtta gatacagatg attcagaagc agaaatggag cagatccaga 240  
 ccacggtagc atgggtgagtt acgaaccttc acgccacacc aacgcaattg gttaagactt 300  
 cgcactagga tcgcacc 317

<210> 260  
 <211> 283  
 <212> DNA  
 <213> Pinus taeda

<400> 260  
 ggtgcatcca tagttccttt tgctaagcga ctactctatc tcttttgaca tttctccaaa 60  
 tattgggtct ttcagttcct tcaaagtcta gaatcatatc aacatgggat ttagtgaggc 120  
 cgcaatacta accagggcat taaaataata catttcattg atcctattcc caaaacattt 180  
 cccgctatcg tacgttgact cagcatatct agagcaattc ttcttacaaa ccttaagaag 240  
 gttgttcatg atagtctttc cgtctgcaat attggatcgc acc 283

<210> 261  
 <211> 299  
 <212> DNA  
 <213> Pinus taeda

<400> 261  
 ggtgcatcc cacccaagag ttaaattcac ttctccgcct ttctgaggaa gagcactctt 60  
 tggatgatat gaaaagtggg ccaactctta aaaccgtatt cggaaccctg ttccgcggac 120  
 ggtcgatatg cgtaaccggc gcagacattt tatctcctca cacaatatca acattcaagt 180  
 ccccgctgtt ccccgttgcc tttctctgct cccgaccgtt aaacaagaac gaccacaaga 240  
 atgaacaaca ccgcaaccga aacctgacct tccacgttgt cttcggttcg gatcgcacc 299

<210> 262  
 <211> 352

<212> DNA  
<213> Pinus taeda

<400> 262

```
gcggaacgcct ggcaaaaaca gaggggtatgc tcaagcctta cagaaattga aaaataagag 60
aacgtatgac catcaatctc aatctcaaga aaagaagttg caatacgact ccaacacttt 120
tgaaagttgg aggtttgctc tttctagcgt tgcagacatg gttgggtttt agctggaagc 180
gtgtaacggg cactttacag ttgcggggaat tggagattga ggacccccct tcaaacgtcg 240
atagggaggc taagcatcta tagaggattg tgattggtcc ttttccgcta catggaaaga 300
aagtcaaact cagaaaatta ccagaagaat tctgtcgtct tctcgcagcc gt 352
```

<210> 263

<211> 221

<212> DNA

<213> Pinus taeda

<400> 263

```
gacgttgtaa aacgacggcc agtgtaaaga gcagccccga tgcgcogaag ctgcgcaggg 60
aaaagctgca gaagatggga ccgatgacca agaagagat catcatgagc ggcacgctac 120
tggtcacggg ggggtctttg atatttgggg gaagctgaa cgtggatgct gttactgcag 180
cgatccttgg tttgtctgtc ctactctgca caggcgtccg c 221
```

<210> 264

<211> 365

<212> DNA

<213> Pinus taeda

<400> 264

```
tacggctgcg agaagacgac agaagcagaa cctgcccaata taggatcaat tgaatgttgt 60
gggattgctg catgcccacc tttcccagtt attactgcct tgaagaaccc acagccagcg 120
agtaagggcc cgggtttcga accaatcaca gatgtaggat aatcgcttga aacatgcata 180
gcgaatatgc cttccacatt ttccagtgtc ccctcctcta tcattctttt tgatcctgca 240
cctgattcct ctgcaggctg gaagagtaat atgacagttc cctgtaacaa atgctgacgt 300
tggtgcaaaa tctttgcacc accaagaagc atggtaacat gtgcatcatg tccacaggcg 360
tccgc 365
```

<210> 265

<211> 491

<212> DNA

<213> Pinus taeda

<400> 265

```
tacggctgcg agaagacgac agaaaagagg caaaccgagc tgcacacctc cactcagagc 60
atttgcaaaa atccacaaca aatctggagc caaggtcttt ccctcattga aaacatttat 120
cggacacatc aatgtctgta gtctttccca tgggccatcc agagtaatca cgggaagaac 180
aatgcacttc agttcagaat ttttgatgac agctatcagc tcctgatcct ttgaaccagg 240
tatataataa tcttgacctg actcctgttt caacagtgtg gaggttctgt caacctcaag 300
caatgaatcg gcagaacttc catttgctgt tttgtcaata caggcattgt ttttaccaag 360
actgtgacgc atcttctgtc cttgtctata cagtgcagtt tggttcaagca tagacttatg 420
tgctagaaca tgtcttcctt tttaaattgta agagaaatgt aggggttgac tgcttttact 480
gaggcgtccg c 491
```

<210> 266

<211> 485

<213> Pinus taeda

|            |            |            |            |             |             |     |
|------------|------------|------------|------------|-------------|-------------|-----|
| acggctgcag | aagacgacag | aaccctggct | gactacaaca | ttcaaaagga  | gtctaccctg  | 60  |
| catctggtgc | tccgtctaag | aggaggcatg | cagatTTTTg | ttaaaaccct  | tacaggcaaa  | 120 |
| acaattactc | tggaagtgga | aagctcggac | actattgaca | atgtaaaagc  | taagatccag  | 180 |
| gacaaggagg | gaatcccacc | tgaccagcag | aggttgatct | ttgccgga    | gcagctagaa  | 240 |
| gatggtcgta | ctctggccga | ttacaacatt | cagaaggagt | cgacccttca  | cctgggtgctc | 300 |
| cgtctccgtg | gtggctttta | ggttggtcgt | tgtgtgtcaa | tgtagtctgg  | tgatgttcag  | 360 |
| tggttttcct | gcttaatcct | ttttatgtat | gcatgtgttt | gttgtgtttg  | tgttttgtct  | 420 |
| ctatgttttt | tctacttggt | ttgtcggctg | gttgaagccc | ggctgggtgtc | ctggtaggcg  | 480 |
| tccgc      |            |            |            |             |             | 485 |

<211> 494

<212> DNA

<213> Pinus taeda

|              |             |            |            |            |            |     |
|--------------|-------------|------------|------------|------------|------------|-----|
| gcgggacgcct  | ggacaaacac  | agaaggcgaa | gtaaaagcca | gtcttacttt | tcatgtaa   | 60  |
| actatcaaac   | tgcattggccg | ttccgctgg  | tggcaatacc | acacctgcgc | cggtagtgcc | 120 |
| aatgaacact   | gcaccggcag  | ctctttcaga | agttgcagag | gacttaccat | tttaattttc | 180 |
| acggcatccc   | gtcaaacggc  | gggatgcttt | taatttttta | atcaaaaaaa | atattaatta | 240 |
| tggcacacaa   | tattgttttc  | aacgaacaga | caggcaaaca | cagtttcttt | agtgtaaaag | 300 |
| aaaaagcatg   | gcatgggttg  | gggcaaattg | tacaggacta | tcccaacagt | aaagaagcat | 360 |
| tgcaattttgc  | agggtttgat  | tttgaagttt | gcaaaaggcc | caatattcac | aggcttgata | 420 |
| atggtaatatga | gattattttct | accagttcat | tctatactta | ccgtcctgat | accaacgcc  | 480 |
| tattaggcgt   | ccgc        |            |            |            |            | 494 |

<211> 469

<212> DNA

<213> Pinus taeda

|            |            |            |            |             |            |     |
|------------|------------|------------|------------|-------------|------------|-----|
| gcggagcgct | gaacatagga | gcattcttaa | gcatatcagg | tataaccata  | aacctgactt | 60  |
| tgctgccccg | aataaagaca | tgctccaatt | gggatacttt | tccatccttg  | gcagtgtaa  | 120 |
| tgatgccctc | gagctggcaa | ttccagttat | cttcgcattc | gatcatgcta  | cccctgtaca | 180 |
| gctcgccact | tttgagttca | actgtcacaa | catgcccggc | tgcttcatgg  | agcaacttca | 240 |
| caggaatccc | caaacttctg | ctcatttttt | tgtcactgct | caaaaaccct  | aaaccccaga | 300 |
| taaaaccctc | ggttctgtgc | cttttatccc | cgggtggctt | attgtttgcag | tagttggcaa | 360 |
| cggctagact | tactcacatt | ttgatttcaa | tctttctaag | tttgcccttt  | tgggttttcc | 420 |
| tcacagtaga | tcctatttta | tgtattttct | cgtcttctcg | gcagccgta   |            | 469 |

<211> 345

<212> DNA

<213> Pinus taeda

|            |            |            |            |            |             |     |
|------------|------------|------------|------------|------------|-------------|-----|
| gcggacgcct | gcaggaatcg | gccgatttgc | agttcgaggc | ataagcgcac | cgaggctcgcg | 60  |
| ttcgatgtag | caattaagcg | cgcatgaacc | gccgctaagc | aagccagtcc | caatcaaagc  | 120 |
| acatgcaaag | cggatgcaat | caaatcttcc | gttgtaagca | agcacaaatc | caactgcaca  | 180 |
| tgagatcacc | accatgaatg | caattcgagt | gcgagctaaa | tcccaaaacg | ctgcgagtg   | 240 |

cccctgaagg cgattcgat gtaatatattg accgctgctc aacacaagca gtactccaaa 300  
caccagtgtc tccgccgtca attctgtcgt cttctcgcag ccgta 345

<210> 270  
<211> 342  
<212> DNA  
<213> Pinus taeda

<400> 270  
ctgcgagaag acgacagaac acagacacaa aatttggaaa ctacagaaaa gaccatgtca 60  
tgaaatcttc ataattgggc ttcagatgca gagggggctg gttttggatt aagcaatggc 120  
tgaagtgtt tgacaacaat actcatgtta ggacgaaaat ctgcttcata ctgcacacac 180  
aatgccgcaa cagcagccat ctttgcaaca gcctttggag gatattcact cttcaacttg 240  
ggatcaacac actgctttac tttgtcttca ctcaatcttg gagttgcca agtaacaagg 300  
ctttgttgtc ccctaggcat tgtatgggcc acaggcgccc gc 342

<210> 271  
<211> 313  
<212> DNA  
<213> Pinus taeda

<400> 271  
tacggctgcg agaagacgac agaaagagac aggcttggac ttcgtggcct tcttccacca 60  
cgcattatct cttttcagca gcaatgtgat cgtttcatgg tttcttttag atccctggag 120  
cataacactc gagatgggtc agctgactta acagctctgg caaaatggcg tattcttaac 180  
agattgcatg acagaaatga aacactatac tacaagggtc ttatagatca cattgaagag 240  
tttgctccaa taatctacac tccaactgta ggattgggtt gtcagaatta tgggtgggctg 300  
ttcaggcgtc cgc 313

<210> 272  
<211> 277  
<212> DNA  
<213> Pinus taeda

<400> 272  
gcgagcgct caatagttat ggaagggcag ctgcactact tcagcatgag tggaggccta 60  
aaagttttgt taatctttct ggtgaggtgg acaccaaagc ccttcacaac agtgcaaagg 120  
tggggctatc tctggttttg aagccttgaa ggatatgcac tatttggtac agatttaagc 180  
gaaggtctgt gccaaatctt tattggaatt tttgagtttt tcctttcaga ataattatct 240  
caatgcctgt gttttctgtc gtcttctcgc agccgta 277

<210> 273  
<211> 278  
<212> DNA  
<213> Pinus taeda

<400> 273  
gcgagcgct tttgccaat taacatccct gcatctgcgc attaaaaatt gattgcagac 60  
ctgaggttta agtgaagct tcttccacca tctctcccct gtttaaggaa gaccgaaac 120  
cctagccact gtctcctctg tgacttaaaa ttccagttca ccaaccttaa ctctgcgtcc 180  
gttaaaattc tgggcaaact gcactgccaa ttgggtcatca tatectctga atttggcaaa 240  
gaaaacatag gtcattctgt cgtcttctcg cagccgta 278

<210> 274  
 <211> 180  
 <212> DNA  
 <213> Pinus taeda

<400> 274  
 gcggacgcct cgtcaatcca tggttgtaaa catgccttca aaactgtttc cttatgtcgc 60  
 acaatgtcta catgttcctt gagcgatttt tcctgctgca ttgcgagcct ctgtgtaagt 120  
 cccactatct gcgctgtccc ttttacttca taatacttct gtcgtcttct cgcagccgta 180

<210> 275  
 <211> 446  
 <212> DNA  
 <213> Pinus taeda

<400> 275  
 tacggctgcg agaagacgac agaaaaaact gtatacgagt aggcagcgag tcctggcagt 60  
 atgggagatt gaactccaat tacatttagt tacaagtagc atcaacagtg actgagccaa 120  
 gagctctaca cagaaaaata aaataaaaac tgtatatatt tacaggagaa accccaatgg 180  
 cctcagggcc tgaataaatc aatcgcagcg gtggctcgatg tggccttttc agggctgcaa 240  
 atcttgcaag gggaagccat catccttggt ccgtatcctt tttgagggat agcgagccac 300  
 gcagccaaga tttgaagcga ttgaatactt tgggggtgctg agaacgcacc agaacaatgc 360  
 cactcgagaa atactactgt gattactgtg acaaacaatt ccaggatact ccctccgcta 420  
 gaaagcgaca tctacaaggc gtccgc 446

<210> 276  
 <211> 425  
 <212> DNA  
 <213> Pinus taeda

<400> 276  
 gcggacgcct gtaccgtatt ggaattctaa acccttcctt ggtatagggt tttcgccacc 60  
 cttgcgttca tttggttttg tattacgtcc gattcctccg tctgcgagct ctctgcaact 120  
 tggcaatttc attgtgattt tatectatga tgcttcgtat ttgtttgaag ctctgctcct 180  
 tagttctctg tgataccagt tggtagtctg caagtttcga tgtggggttct tttagctggg 240  
 ctgggggttt gttgctctga gtatgttgag ctgcatgctc gtggcggtct tcacggctcc 300  
 atttgttcgg aatctgttgt ggaagtgtct cggtcattctg tggaaactgtg gaaacctggg 360  
 aagatttggt tatctgcttg tgtctaaact gttcttgagt tttctgtcgt cttctcgag 420  
 ccgta 425

<210> 277  
 <211> 295  
 <212> DNA  
 <213> Pinus taeda

<400> 277  
 gcggacgcct gctgttgaag aaggatgaag tcattgtctg cggccctggt cagcatgatt 60  
 tcggcattct taatctggtc aaccagtcag aaggtggcgc tgaaggtagc gaagaggcaa 120  
 cctgggtagc tgcactggaa actcaagctg caaggggcac cgaccctcag acttcgcgcg 180  
 attaacttct ccctctggct aagtcgatgc caaggtcctt gttctgggtt cttctctctg 240  
 tttcgcatgt tgttcttctc tctgtttcat ttgtttttct tctgtcgtct ctgcg 295

<210> 278  
 <211> 196

gcggacgcct tgctaggaga gctctacgcc attatttgaa cgattgagcc gaagtttcac 60

cgtttaaggc atttgtgtcc cagaggttat tggagattag cagcttggat ttggctgctt 120  
 cgctcagcgc cgtgattcag cttttgattg attctctcca gtttcataac ctgtaacgac 180  
 aatggcaatg aagacctaca catttgcagt ggcagctgcg tacgctgtag tcctgatggt 240  
 cgctctcttt ggcacgcgaa aggctgctga tgcaccgtct cccagccccg ttactggcgc 300  
 gggttccatg gacttcgttc cttctgtcgt cttctcgcag ccgta 345

<210> 283  
 <211> 218  
 <212> DNA  
 <213> Pinus taeda

<400> 283  
 gcggacgcct tatcagctgg gggcattcat aggtatggaa attcagatca acttcagtgg 60  
 acagtatgtg gatttaggcg acctgtgaca gttcacgata tctattcatt tctatccaga 120  
 gacagattcc catactcacc tccgtccttc ccatatattt tctggaaggc atcatgtcct 180  
 cccaaattta ctcattttgc ctggccgctg ttttacia 218

<210> 284  
 <211> 219  
 <212> DNA  
 <213> Pinus taeda

<400> 284  
 gcggacgcct gttgccacag aagaatgaat aatgcttcaa attttgagac ctcttcggag 60  
 gaaaatcctt gttcttactg cctaaccact catgatgatc tgcgtcacgc tgattatgag 120  
 ctgcaattta aattatttca gatgaaacat tcccatattg agcttgcaga caagttgcag 180  
 acccttcaat ttcagttctg tcgtcttctc gcagccgta 219

<210> 285  
 <211> 60  
 <212> DNA  
 <213> Pinus taeda

<400> 285  
 gacgttgtaa aacgacggcc aggattaagg ttcatgagct ccgcaacaag agcaaatacag 60

<210> 286  
 <211> 732  
 <212> DNA  
 <213> Pinus taeda

<400> 286  
 gcggacgcct ctaggagccg gcggaattcc tgtgagctcg aatttgccga gcaggttatt 60  
 gtccttcgtc cgcgctcgtc caccttcata tacttgaatt agaaccacag gctgattatc 120  
 tgagtaagtt gagaaaatct gtccttctt ggttggaatg gtggtgttcc tcggtattaa 180  
 tactgtcatt acacctcccg ctgtctccaa cccagactt aatggcgtga catctagcaa 240  
 cagcaggtec tgcaccttct cgttgccttc gccgctgaga atggcagcct gcacagctgc 300  
 accatatgcc acggcttcgt ctgggttaat gctcttacia agctctttgc cattgaagaa 360  
 atcttggagc aattgttgta ctttggggat acgagtcgaa ccccgacca agacgacatc 420  
 atctatttgg ctcttgtcca tcttagcatc ttcgcataca tttctccaca ggctccatac 480  
 ttctcctgaa aagatccatg ttgagttcct cgaagcagagc tcgctgaatt gtggcgtaaa 540  
 aatcaattcc ttcatataga gaatcaatct caatcgttgt ctgtgtagta gaagacagcg 600  
 ttctttttgc cctctcacat gctgttctca gcctgcgaag agctctggca ttcccgtcta 660  
 tgtcttttct gtgctttctt ttgaattcct gcacaaagtg attcaccatt ctgtcgtctt 720

732

<400> 287

<210> 288

<211> 347

<212> DNA

<213> Pinus taeda

<400> 288

<210> 289

<211> 106

<212> DNA

<213> Pinus taeda

<400> 289

gcggacgcct gggaaagcaat ggatgggtgg ctagacgcca tccgtcttgt gtatactatt 60  
tttgcacgcg qaaagaqtga tqtcctqccc qtcqttttac aacqtc 106

<210> 290

<211> 307

<212> DNA

<213> Pinus taeda

<400> 290

|            |            |            |            |            |            |     |
|------------|------------|------------|------------|------------|------------|-----|
| gacgttgtaa | aacgacggcc | agattcaaaa | gaaaaaatcc | tcacttcttg | gctccgtttg | 60  |
| cgctcccgcc | gaagctcctc | tgcaaccctt | ctgcagcgta | cactgcattc | cgctcgcggt | 120 |
| gctgggtcac | ctcgcaggtc | cgctgacggt | aatgggtttc | caataaagct | atttgtcctc | 180 |
| tacccaaaat | ccatctagca | ttcgttgtgg | attgacattc | tgccatttct | ctgcttttct | 240 |
| ggttgatatg | caaagattga | aagcccaatt | gcaagcagtg | gtcgtggatt | cactataagg | 300 |
| cgtccgc    |            |            |            |            |            | 307 |

<210> 291

<211> 286

<212> DNA

<213> Pinus taeda

<400> 291

gacgttgtaa aacgacggcc aggaataaaa caaagcatca ctgcaaaatt tcaaacgtgg 60

```

taataacggc tagccagctc gacgtgaagg cagtgggggc cttgagggtg ccttttggcg 120
ttcaaaattg gctagactac cataacataa atattgattt ctcagtgaca tcaactggtt 180
ggagtcatcc acagcctgtg caccagtacg gcaattgcct tttacatgaa gccatccttt 240
cacttttact tttgagattc tcagaactga ggggctaggg gtccgc 286

```

```

<210> 292
<211> 290
<212> DNA
<213> Pinus taeda

```

```

<400> 292
gacgttgtaa aacgacggcc agcaccttcc tagtcccctg ttccattctc ctgaaatagg 60
agcagtttga cccagtccag ttttcagaat tgagaatatg aaacaaagaa cctaagcata 120
tgagagaaca tacaaagact ttgtataaac tacttttcac aggatctcaa cagccctctg 180
ctgagatcca tttgatacaa ggccccttgc atctccaccc tctcccttat cacctccact 240
agaaagatga tggaaagcag acacatggaa atgttgctgc aggcgtccgc 290

```

```

<210> 293
<211> 497
<212> DNA
<213> Pinus taeda

```

```

<400> 293
gacgttgtaa aacgacggcc agttagggtg tatattgatt gatgactctt tgactccatt 60
tatgaaaaca tctttgttct cgagatttaa tcagtattaa gctttcagag tgaagttcag 120
tttgatctgc ataaacctga tccaccatat ctacatcaca tctaaaatta ctaaaatgtg 180
aggagatgga atttgtttct tgagaatccc tattcctcat cgacactgtt tactggatca 240
gatccaatca aactcttgag aagtaatctc tggaaagaaa ttaaaaagtc ttacactgaa 300
ttatctcgat atcagaagca gaaattatga tacatagact tcttaataat gaagagtcac 360
tttgccaacg ttgtctttgc caccaccacca atcccatga tcccaaagat ctgagggtttc 420
catctctatg tggctgtgat aacactggat ttttcaaaaa tcttctactt tcgcatccaa 480
accttttttg gatattt 497

```

```

<210> 294
<211> 238
<212> DNA
<213> Pinus taeda

```

```

<400> 294
gacgttgtaa aacgacggcc aggggggatgg gagatacaga aagattccgg ataaaaggga 60
gcaatgaacg gctgggttaa gcgtagtcca ccacactagc cccacctcca tgaggcctac 120
acgtgaagaa gcaggattct gggaagcgcg agaggccgtt caagattatc agctcatgtg 180
attcgcccaa ctgcaaaaga tgtctaccgt aggctgtgat ggggcccaag gcgtccgc 238

```

```

<210> 295
<211> 311
<212> DNA
<213> Pinus taeda

```

```

<400> 295
gcggacgcct atcagatggg tgagttgacc gacatttatc gtccgataaa tgtttgaggc 60
tgatgtcatg gcaatccacg tgtctgcacc atatttcac ggagcccctc gtccggaatat 120
tccatcgccg gagagctggc gcgataggtt tcaggcggcc ggtttctggg ttgcagctgt 180
ggcttcccgc gcgccttaac tgttggcccc gcgcacaggg ggaaattaca aatttcaaca 240

```

tatccaatac catcatataa cccaacaaca ctagcaacag atcctgttct gtgccatcgt 300  
ccaactcttg a 311

<210> 296  
<211> 202  
<212> DNA  
<213> Pinus taeda

<400> 296  
gcggacgcct taattcgact acaaagatac tgaagccaat gatgacaggt tgtgccactt 60  
tcccagctga taaagacagc tctgaaattg atagagccag aactccagct gcaatgctcc 120  
ccagagcctg gttgaagcgc ttgctaaagg tggcacttta tagaccgacc caaacctcc 180  
ctggccgctg ttttacaacg tc 202

<210> 297  
<211> 507  
<212> DNA  
<213> Pinus taeda

<400> 297  
gcggacgcct actggaacc cggtccaccg aaggctgaaa ttgtcctgct ttgtataccg 60  
aatggcagga aggttgctga gcatcagggt cacctggtaa agattatcga tcctatgctt 120  
caataccttc agctgctctg cccaaggac agtagtattg cacaggtaaa tttcagattc 180  
attgacattc atccggaagc gatatggtga gttctcgatc ctgtcccca tgaggagctc 240  
ccaagatatt tctgccatgt ccttcacacc atccaagggc ttgcagaagg gcaggctgta 300  
atagctgtag ggaagctctg tctcgactga ggtaagggaa ttgacgttca ccataaatc 360  
tgaccctgga gagaatatga tgtgaggaat acagtgccca gtaaatataa ctccgcatta 420  
tacgtttgtg tgtgccttcc ccaatattgc cccaacataa tcaaaacca caatcccaa 480  
tcctggaccg tcgtttttac aactgtc 507

<210> 298  
<211> 522  
<212> DNA  
<213> Pinus taeda

<400> 298  
gcggacgcct tgtcaggacc aaatgtgtaa gaaacacctc tgtcattcga gccccatcct 60  
tgaattgcat tgcaggggtc tgaccaaaaga agatcacata acaaccctgt atctggcaca 120  
tctgtaggtc gaggtatatt ctttatttgt tccaaattgg tcagttcagg cgaaagacca 180  
ccatgcatgc ataggatctt ttcattctata agtgcagcaa caggcaggca gttgaaacag 240  
tctgtaaaaa gtttccatag tcttacattg aatctgcgct tgcactcatc atagaaacca 300  
tatatgcat ttattgaggc acattcatga tttcccctca gaaggaaaaa gttctctggg 360  
tatttaattt tgtaagcaag gaggaggcat attgtctcta ggctttgttt gccccggtcc 420  
acataatctc ccaagaaata agtaatttga ttctgggtggg aagccaccat attcaaaaag 480  
ccttagacag atcagaatac cggcctgtcg ttttacaacg tc 522

<210> 299  
<211> 410  
<212> DNA  
<213> Pinus taeda

<400> 299  
gacgttgtaa aacgacggcc aggagacggg aatacctatt tttgggagga ttattgggct 60  
cggaatcag catattgatg tggctgcaac tcgcatcctc gatctttggt ggttcttcgg 120

cgattttacac atttgagatc tacttcgggtc tgctagtttt ccttgggtat attatatttg 180  
 acacacagat gatcatcgag aaagcggacc atggagacta tgattattta aaacattcac 240  
 tggacctctt tattgacttc gttgctgtat ttgttcgcct gatggtcata atggcaaaga 300  
 atgcagacag taaatccagg gaagggaaaa agaagagaag ggcttgaact atgtgagata 360  
 caaaaatatc gagaatagaa gggcttgaac tagggcttga aagcgtccgc 410

<210> 300

<211> 237

<212> DNA

<213> Pinus taeda

<400> 300

gcggacgcct atcagacaag ggttggttgac cgaactttat cctctgaaaa gtgcttgaag 60  
 ctgatgtcat ggcaatccac gtgtctgcac catatttcat cggagcccct cacacggaaa 120  
 caaccttaag ccaaaagggtg gtgcatgac ttaccggccg tttatggttt gcttcgggtg 180  
 ttttctgttg ggtggtttcc cgcgcgcgtt aactgctggc cgtcgtttta caacgtc 237

<210> 301

<211> 625

<212> DNA

<213> Pinus taeda

<400> 301

gacgttgtaa aacgacggcc aagaggggga aactcccaaa acacttttcc atttttcttc 60  
 ttttattaaa cttcaaagta ttttccaaca gagttacaag gggccaacca tgtccaaatc 120  
 catgcattta ccaagtacaa agaatggtag tccttggtt gacctatcgc actagccaaa 180  
 agtgccaagt ccacaactag ggtgtgcca acctaagggtt gacaccttgc ctagaaaaaa 240  
 ccccaaactt ggcaccacaa ataacacaga aacacaactc ttgacctctg ccagaaacca 300  
 ggctctcttg ggaaagccac acctctctct gtgatatgtc ttatctccaa tttccctttt 360  
 tgtgatgcac tccttggtt gtgggttctgc gatatcacac aaacttacat ttctgcgatt 420  
 tttgtttctt gcttctccaa atcatgcat cttattttta acccttgaga cccttcacac 480  
 tttccatcca tgacgtcact tcatcgtttt agccaattcg tcatttgggc atgttggggc 540  
 ttgggtctac ccgtattccg gtcgtacagg ccaaattgac cattttggtc caggtgggtg 600  
 caccattcc tggagggcgt tcggc 625

<210> 302

<211> 629

<212> DNA

<213> Pinus taeda

<400> 302

gcggacgcct ccacagagct cacacatata atatactatg atgcctccag aactatggca 60  
 ctctgtatgc cgcttcaata tggattagcc cacactgcgc catccaatta ggogaatcaa 120  
 ccttatagca ccatccacaa cctccagcgc tctctttttc acgctagatt ggccaactac 180  
 aggctttaca acactactca tatacaactc aactcggctc ctctgctcac cactaaatca 240  
 cacaggctcc aatcgctaga cagagccact acacaggcac taatagccac tacacaggca 300  
 ctaatcttgg cgtcctccac caggttccaa caacaacccc aaattgcata tgcactccac 360  
 agtgagcacc aactagggtc acacaatagg ccacaccaac aacactccaa ggaccctaga 420  
 tcctgcctca ccagacacc actaggcctt cctcacagct cacctaagtg agccaacaac 480  
 tggctgggca cacagctccc aactatatga gcacacagcc caactacagc tccaccacac 540  
 gcacagctac acgcacaatg ccttctcaag ttcacagcca caccataacg cagcacagtt 600  
 cttacaaaca tatctctcca ggcgtccgc 629

<210> 303

<211> 324  
 <212> DNA  
 <213> Pinus taeda

<400> 303  
 gacgttgtaa aacgacggcc aggataatgg acacgagaaa cctttggatg tgccctctaaa 60  
 gtgcgggcaa tccttaaagc tgttgaattt tgttgctgta cacgaagggtg caggggtcttt 120  
 atgccacgaa gaatcaagta cgctgcattt ggacttaata cacctcccaa gacattgtgc 180  
 aaagcacgta ctgtgccaat aaccttggtt gaaccactca aactgcctgc aagaacatca 240  
 ttatgacctg caatatattt agttaccgaa tgcaatacaa tatctgcgcc gagtgctaac 300  
 gctttctggt taacaggcgt ccgc 324

<210> 304  
 <211> 331  
 <212> DNA  
 <213> Pinus taeda

<400> 304  
 gacgttgtaa aacgacggcc agtcattatt gacaataatc ctttcagctt tttactgcaa 60  
 cctttaaacg gtataccttg cgtttctttc actggagcac actcagatga taatcagctt 120  
 ttacagggtgc tcttacctct gttgaagcat cttgccactc aggaggacgt gcgccctgtg 180  
 ttgtatgaaa gattttacat gcccgcatgg tttgaaaagc gtggcattcc agcatctgag 240  
 tggcccttgt gacttggttt tgattttgga tactctttgt cattttgggt caaggtaaag 300  
 gtgtacgtat ccaagtgatg caagcgtccg c 331

<210> 305  
 <211> 286  
 <212> DNA  
 <213> Pinus taeda

<400> 305  
 gcggacgcct gatagcacga gtcttcttgg gacgcaaatc aagaggcagg tacttctttt 60  
 tcttgatgc ttctcttaat gcggatcgct ggctctgaga aatcacagtc agaacctgag 120  
 ctattgatag cctcacgacc ttgatttttag agagtttggt gggcgctcct ccagtgcct 180  
 ttgcaactct gagcaaggca agctcagcct tgagctcctt gacctggctt aacagctcgg 240  
 atttgcctt gtggcggact caaggacctt taacctgggc gttcgt 286

<210> 306  
 <211> 271  
 <212> DNA  
 <213> Pinus taeda

<400> 306  
 gcggacgcct ggtgtcgctg ggccagttca agtatttttag caacagtgtt cacacttatt 60  
 ccctgtgata ttcttgactc acacaaccac cttactgac gcagaccata tcgatctgct 120  
 gctgtaagca aatgttcgat cattgtctca ggtgtcaaaa agcaagggga tggatcagaa 180  
 agctcttcta aatctgcatg ctctctctaaa tctggaaggg tatctttgta aataaagtgt 240  
 aacatagcct taaacacctc tggccgctcgt t 271

<210> 307  
 <211> 283  
 <212> DNA  
 <213> Pinus taeda

&lt;400&gt; 307

```

gacgttgtaa aacgacggcc agaggtgttt aaggctatgt tacactttat ttacaaagat 60
acccttccag atttaaagga gcatgcaaat ttaagaaaaa ctttcctgat tcaaccccct 120
gccttttggc accctgaaga tggttcaaca atttgctaac ggaaccaatt caaaagggcc 180
gcctccattt aaggtgttgt gttagtccag aatatcacia ggaataagtg ttaacaccgg 240
tgccaaaata cctgaactgg accaacgaca ccaagcggtc gcc 283

```

&lt;210&gt; 308

&lt;211&gt; 259

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 308

```

gcggacgcct tgtaatccag ggccttgaat attgtaagag aagatcgaga aataatagtt 60
ttcttattat caggaatcac agcttgaaga aggcagacca tggactccca ctggcttcgt 120
gatattgagt cccaacaaa cattagtctg tttcccctca atctccacag caagtctctg 180
gcattgaatc tgcgaaagga acacccgagt ggcttccacc tccatttctc gtaatcagaa 240
tctggccgtc gtttaacaa 259

```

&lt;210&gt; 309

&lt;211&gt; 237

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 309

```

gacgttgtaa aacgacggcc agcagaagac cagtgcagta tgctgcagca tagtttgtaa 60
gccctacttc gaggccataa cgaggcaact ccctagaata agcagccgac ataacaacat 120
ctcccgaag agttgcataa atgatctgtg ccaccacatc cttgttgctg aatctaacga 180
ccaatcggtg tttgggtgtg ttgtacttgt tcttatcttg gttaatcagg cgtccgc 237

```

&lt;210&gt; 310

&lt;211&gt; 417

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 310

```

gacgttgtaa aacgacggcc agcatccatt gcagaaatth tgggggctat atttagcaac 60
agatatcaca gctgtaagtt caaagttgga cccttcttct tcgacatctt ttccagctgt 120
gcaataaact gaacactgtc cttttggata agcttcctca acatatttag aaagttcaac 180
atccaagaca ttgcggtact cctcaacata tatggatgca agttcatcat ctgcagctgg 240
tctcaccgct gtacaaactt gtttaacatg gttgacagtt gcaacttgag cagtcctgtg 300
atccaaataa tgagttccgt caagctcact gaactcagtc acaatcacct ggccactttg 360
attgggcatc tcgaggggata tcatgtgaga cttgttggtg atgggggaaag cgtccgc 417

```

&lt;210&gt; 311

&lt;211&gt; 308

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 311

```

gcggacgcct gcataaacat cgctaccctg gggatgatta ataatagtac cagggttagg 60
attttcttca tcttgagcga tatcatcata cataaagacc acaatgtttt cctctttcaa 120
accgcctttc ctccagaattt ggtaggcatg gcagatatca gcctgatgcc tgtagttcca 180
ataaccggaa gaaccagcca acagaatagc ccactgagta ccgatcgtat cactatcatc 240

```

```
<210> 316
<211> 292
<212> DNA
```

```
gcggacgcct tactaaaacg acggccagat gtgtaatggg gaaaatgtgt catgatatgt 60
gggtacaaat aacgagccac ctgctctatg ttttcgaagt tttctgttgg atttgtccgg 120
gtgagagagc gttcgttcgt tgcgcgagag gggcaaaatg ctgagcgtgg ggaattgcca 180
```

```
<400> 321
gacgttgtaa aacgacggcc agcaaccaaa taaaccccac atgtgctcaa tgtttttagta 60
taaaaggaga tgacttaaga gtcatttcac acacacttct atcttgattt ctctccactt 120
gtcttggggt ttagtggaag agaaatctag gagtggaagc cctagacgtt ggaggataag 180
aaggcaaccc tagaaggcag agctaacgct atcctaaggc aaccctaacg ctatcctaag 240
gcgtccgc                                           248
```

```
<400> 322
gcggaacgcct gctcagcacc tggtatagtc atttcttttt tcctttttct cattttttct 60
tttcgaatga ccgcaatgaa attcaggctg cccaacgcgt ttttgttttc acaattaatt 120
tttgaatcat acgcgaagat catgatgaga atggttggtg aaaaaaactg tttgtaaata 180
tttaggtgac caacaatttt catgattgca atctaaagtt gataattgat ttatcgggtc 240
gacatttgta attattaaca cggaaaatct gaggcttaca atttttggtg tgtaaataatt 300
taggtgacga acaatttttc tgattgcaat ctaaagttga caattgagtt atcgtgtcga 360
catttgtaat tattaacaca caaaatctat gaggcgtccg c 401
```

|             |            |             |            |            |             |     |  |
|-------------|------------|-------------|------------|------------|-------------|-----|--|
| <400>       | 323        |             |            |            |             |     |  |
| gcggacgcct  | catcaatcca | tggttgtaca  | cgcgccttca | aagcggcttc | cttatgtcgc  | 60  |  |
| gcagcgtcta  | cttgttcctt | gagcgccttt  | ccctgctaca | tccgcgcgag | cctctgtgca  | 120 |  |
| agggccactg  | tctgcgcggt | ccctttaact  | tcgtcgtact | tctgctgcag | ctcacgtgtc  | 180 |  |
| tctattttcta | agtgcataat | atttgggtcc  | tcctgcatag | tagtgaactt | cgaacgactc  | 240 |  |
| ctcaaatagc  | caggtgtagt | ctttcattgc  | actattgata | tccactattc | ctgctataat  | 300 |  |
| ggcgctaaca  | tgtctgttct | tcacctttgg  | cggagttgaa | ggctgcgcct | tcttggagct  | 360 |  |
| cggttattttg | aagctgaacc | ttgggcataat | cttccttcac | ctcgtgcata | ccctgcttctg | 420 |  |
| agtttctgga  | tgcacgcctc | cactgggtct  | tctgctggga | tgggcaactc | taagaccaac  | 480 |  |
| tggatatgcgt | cgc        |             |            |            |             | 493 |  |

```
<210> 324
<211> 143
<212> DNA
<213> Pinus taeda
```

&lt;400&gt; 324

```

gcggaagcct tcttcaatcc atcaggcctg attaatgtat tgaccttctt tgtctgaatg 60
tcatacatctt ttttcaactgc atccttgatc ttcttcttgt cttgctttct atcctttctc 120
ttgctttcta tcctttctct ggc 143

```

&lt;210&gt; 325

&lt;211&gt; 314

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 325

```

gacgttgtaa aacgacggcc agcaaaattg atataaagaa tagacacatc gactcaaattg 60
aagtgaacta acagttcatt aattcatgtc agcttgaatg catggacata caccataaaa 120
taggcagttg gggtcaccca aaagaacata gaaacatctc gcatctctct gaagaaactc 180
ggatgggtac aggtctgtga cttcgcatac tttgaaggag cactctcttg gataagtaca 240
atataggtag catctcggac tcgcctgaaa tctcgcaaag aagtctcatt ctctccttg 300
ttacaggcgt ccgc 314

```

&lt;210&gt; 326

&lt;211&gt; 332

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;400&gt; 326

```

gacgttgtaa aacgacggcc agaagcatca ataaacaaaa tgacagatta acaagttctc 60
tcttaattctt aagagaatac atcaacatcc aagtaaagtc ataacacatt tacaaaatgg 120
tgccacggta tccattctct gtaacaagg ttttctgaaa atagttttcc tcttatctat 180
gtaactcttc ataggggatgc ctgtgtcaac gtgccatatt cccaaatttg gccacaatca 240
aaccttcctc attagaagaa acaatctctg gtctagctca aaattggcaa aatttccagc 300
atctcccttt aacatcatta gaaggcgtcc gc 332

```

&lt;210&gt; 327

&lt;211&gt; 1098

&lt;212&gt; DNA

&lt;213&gt; Pinus taeda

&lt;220&gt;

&lt;221&gt; modified\_base

&lt;222&gt; (879)

&lt;223&gt; a, t, c, g, other or unknown

&lt;400&gt; 327

```

gggagatgct aatttgaagc ccttctctga aggtggacaa ttccagcagc agtgggtctaa 60
agccccaata tggctataga aattcttctg ggggttgacac ctatggaaga gggtcggaga 120
ggacgaagct gtggatcgct cttaccatct gtgcggaagg tggtagcaga attcattgga 180
acgttcttcc tcatatttgt aggatgcgga tctgtcgttg ttgataagat aagcaacggg 240
tccataactc atcttggtgt gtcgcttgta tggggaatgg cggccatgat tgtaatttat 300
tccataggcc atatttctgg agctcatttg aatcctgcag tgacgttggc ccttgccggc 360
gtgaagagat ttccatgggt tcagggtcca ggctacatag tagctcaagt atttggatcg 420
atatctgctg ggtttctcct acgtttcatg tttggagaag tggcattcat gggagccaca 480
gttccttcag gctcagaaat gcagtccttc gctttggaaa ttattactac gtcattgttg 540
gtgtttgtgg tttctgcagt cgccactgat acaaaagcgg tgggtgaatt gggagggtca 600
gcaattggag cgaccatcgc aatgaatgta gccatatccg gaccaatctc aggagcttca 660
atgaatccag caaggacaat aggatccgca gtggctggca acaaatatac aagcatttgg 720
gtttacatgg ttgggcctgt aatcggtgcg ctaatgggtg caatgagtta taacatgatt 780

```

```

agagagacaa aaatgtccga aagggagatt atgaagagtg ggtcatttgt taaggacatg 840
ggctccagcg aatcaacagc ataacaactt agagatttnt tgcattccccg agacggtatc 900
cagtgatagt ggagagtagt cataataaga tttgtgaaaa tgtttgtgta gattaatgtg 960
taaaattcaa tccatcaacc atgaagcgaa ctgcattccg tttttaaatg tttattggat 1020
ttgaattaat aaacagctta tacgtgaaaa tccctacttt atgtacggaa aaaaaaaaaa 1080
aaaaaaaaaa aaaaaaaaaa                                     1098

```

```

<210> 328
<211> 992
<212> DNA
<213> Pinus taeda

```

```

<220>
<221> modified_base
<222> (762)
<223> a, t, c, g, other or unknown

```

```

<220>
<221> modified_base
<222> (774)
<223> a, t, c, g, other or unknown

```

```

<220>
<221> modified_base
<222> (778)
<223> a, t, c, g, other or unknown

```

```

<220>
<221> modified_base
<222> (808)
<223> a, t, c, g, other or unknown

```

```

<220>
<221> modified_base
<222> (828)
<223> a, t, c, g, other or unknown

```

```

<220>
<221> modified_base
<222> (849)
<223> a, t, c, g, other or unknown

```

```

<220>
<221> modified_base
<222> (881)
<223> a, t, c, g, other or unknown

```

```

<220>
<221> modified_base
<222> (898)
<223> a, t, c, g, other or unknown

```

```

<220>
<221> modified_base
<222> (936)
<223> a, t, c, g, other or unknown

```

<220>  
 <221> modified\_base  
 <222> (945)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (953)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (967)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (977)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (984)..(985)  
 <223> a, t, c, g, other or unknown

<400> 328  
 actatagggc acgcgtgggc gacggcccga gctgggtatcc gatgaagcta gattcaatgg 60  
 ttcaagtcct atgaaagcta gattggagaa ttgcaaagaa atctaattctc cgttagttgt 120  
 cccaaccact gactcgcacc caatcagagt atattaaagt taaagattat ataaaggtaa 180  
 attgaacatt tataaaatct taaatgtatt tttagagtta aacattatat agaatatatta 240  
 atgtagtata gatataataa aatattaaaa attaatttct ctttactatc aagtgaataa 300  
 aaataaaaaa taaatgtaag acaatataat aaaagacttg ttttttagtgc attttttgga 360  
 ctcttcgtta ttgtgtggta ttgtgttatt taaactgatc tttttactgt atatatggat 420  
 ggggtaccca tcaaacttgt gatttcaata aattcctccc ggattttaga gaaattagac 480  
 cataaaaact cacgaaaaaa atttttagacc ataaaaactc acgaaaaaaa cttccccaaa 540  
 atcacgctaa aaacaactag ataaaaaaat acccatcttt gatgatgtgg atagtgaacag 600  
 cctattccaa actatcacct aaattgtaag ttacatgcat aacacgatga cctcatctat 660  
 acgttgtgcc aaataaagggt atgaccgttc aaactaaaga atcaacgagc tccaacgcat 720  
 cttttgctgt ggggggatcc tcacggctta acattcatgg anccgattac cttnctancc 780  
 aaccaagggt tttaacctgg aacaaatncc aaaccaatta ccagcttnac aaatcaaccg 840  
 agccgcccna ccgggatcat tttggtcaag tctcgaaaac nggcattggg tatatggnat 900  
 atggaattgg aattggatca atggtaacct tggganaagc ttaanttggg aanccctttt 960  
 ttttganggg ggccaanttc ccgnncccc gg 992

<210> 329  
 <211> 996  
 <212> DNA  
 <213> Pinus taeda

<220>  
 <221> modified\_base  
 <222> (933)  
 <223> a, t, c, g, other or unknown

<220>  
 <221> modified\_base  
 <222> (952)

<220>

```
<220>  
<221> modified_base  
<222> (1030)  
<223> a, t, c, g, other or unknown
```

```
<210> 331
<211> 993
<212> DNA
<213> Pinus taeda
```

```
<220>  
<221> modified_base  
<222> (952)  
<223> a, t, c, g, other or unknown
```

```
<220>  
<221> modified_base  
<222> (973)  
<223> a, t, c, g, other or unknown
```

```
<220>  
<221> modified_base  
<222> (993)
```

<400> 331

<210> 332

<212> DNA

<220>

<222> (994)

<220>

<222> (998)

<220>

<222> (1014)

<400> 332

|             |             |            |             |            |             |     |
|-------------|-------------|------------|-------------|------------|-------------|-----|
| atactcaagc  | tatgcatcca  | acgcgttggg | agctctccca  | tatggtcgac | ctgcaggcgg  | 60  |
| ccgcgaattc  | actagtgatt  | agatggtaag | agcgatccac  | agcttcgtec | tctccgaccc  | 120 |
| tcttccatag  | gtgcaacccc  | cagaagaatt | tctatagcca  | tattgaggct | ttagaccact  | 180 |
| ggtgctggaa  | ttgtccacct  | tcagagaagg | gcttcaaatt  | agcatctcca | agttacattg  | 240 |
| atctattcta  | ttcatataca  | tataacaatg | ctgcttcgag  | actgacaaaa | tgatccgttg  | 300 |
| gcgctcgttg  | attgttagct  | gtaattgttt | ggattgttca  | gttaaggcct | tgttggtagg  | 360 |
| aggtaatcgg  | tcatgaatgt  | tagccgtgag | aatcctcaca  | gcaaaagatg | cgtcggagct  | 420 |
| cgttgattct  | ttagtttgaa  | cggtcatacc | tttattttggc | acaacgtata | gatgagggtca | 480 |
| tcgtgttatg  | catgtaactt  | acaatttagg | tgatagtttg  | gaataggctg | tcactatcca  | 540 |
| catcatcaaa  | gatgggtatt  | tttttatcta | gttgttttta  | gcgtgatttt | ggggaagtth  | 600 |
| ttttcgtgag  | tttttatggg  | ctaaaatttt | tttcgtgagt  | ttttatggtc | taatttctct  | 660 |
| aaaatccggg  | aggaatttat  | tgaaatcaca | agtttgatgg  | gtaacccatc | catatataca  | 720 |
| gtaaaaagat  | cagtttaaat  | aacacaatac | cacacaataa  | cgaagagtcc | aaaaaatgca  | 780 |
| ctaaaaacaa  | gtctttttatt | atattggctt | acattttattt | tttactttta | ttcacttgga  | 840 |
| tagtaaaaaga | gaaatttaatt | tttaatatth | tattatatct  | atactacatt | aaatattcta  | 900 |

```
<210> 333
<211> 640
<212> DNA
<213> Pinus taeda
```

```
<210> 334
<211> 1028
<212> DNA
<213> Pinus taeda
```

```
<220>  
<221> modified_base  
<222> (953)  
<223> a, t, c, g, other or unknown
```

```
<220>  
<221> modified_base  
<222> (973)  
<223> a, t, c, g, other or unknown
```

```
<220>  
<221> modified_base  
<222> (981)  
<223> a, t, c, g, other or unknown
```

```
<220>  
<221> modified_base  
<222> (1002)  
<223> 'a, t, c, g, other or unknown
```

```
<220>  
<221> modified_base  
<222> (1004)  
<223> a, t, c, g, other or unknown
```

```
<400> 334
atactcaagc tatgcatcca acgcgttggg agctctccct atgggtcgacc tgcaggcggc 60
cgcgaattca ctagtgatta gatggtaaga gcgatccaca gcttcgtcct ctccgaccct 120
cttccatagg tgcaaccccc agaagaattt ctatagccat attgaggctt tagaccactg 180
gtgctggaat tgtccacctt cagagaaggg cttcaaatta qcatctccaa gttacattga 240
```

```

tctattctat tcatatacat ataacaatgc tgcttcgaga ctgacaaaat gatccggttg 300
cgctcgttga ttgttagctg taattgtttg gattgttcag ttaaggcctt gttggtagga 360
ggtaatcggg catgaatgtt agccgtgaga atcctcacag caaaagatgc gttggagctc 420
gttgactctt tagtttgaac ggtcatacct ttatttgga caacgtatag atgagggtcat 480
cgtgttatgc atgtaactta cagtttaggt gatagtttgg aataggctgt cactatccac 540
atcatcaaag atgggtatth ttttatctag ttgttttttag cgtgattttg gggaagttht 600
tttcgtgagt ttttatgggc taaaatttht ttcgtgagtt tttatgggtc aatttctcta 660
aaatccgaga ggaatttatt gaaaccagcc cgggccgctg accacgcgtg ccctatagta 720
atcgaattcc cgcggccgcc atggcgggcc ggagcatgcg acgtcgggcc caattcgccc 780
tatagtgagt cgtattacaa ttcactggcc gtcgttttac aacgtcgtga ctgggaaaac 840
cctgcgtacc cacttaatcg ccttgaggca catccccctt tcgccagctg gcgtaatagc 900
gaagaggccc ggacccgatc ggccctttcc acaaattgc gcaaccctga atngggaaat 960
gggccccccc ctnttaccgg ngcaattaaa ccccgggggg gngngggggg tcccccccc 1020
gtggacct                                     1028

```

```

<210> 335
<211> 16
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Primer

```

```

<400> 335
aagctttttt tttttg                                     16

```

```

<210> 336
<211> 13
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Primer

```

```

<400> 336
aagcttgatt gcc                                         13

```

```

<210> 337
<211> 13
<212> DNA
<213> Artificial Sequence

```

```

<220>
<223> Description of Artificial Sequence: Primer

```

```

<400> 337
aagcttcgac tgt                                         13

```

```

<210> 338
<211> 20
<212> DNA
<213> Artificial Sequence

```

<223> Description of Artificial Sequence: Primer

ctcttaatta agtacgcggg

20

<211> 507

<213> Artificial Sequence

<223> Description of Artificial Sequence: Clone LPS-097

|             |            |             |            |             |             |     |
|-------------|------------|-------------|------------|-------------|-------------|-----|
| gggcacaaag  | ctccgcagcc | tgagcgagcg  | tcattagctt | gtcagtcgga  | accattaccc  | 60  |
| ctttcctctt  | cgctggctag | cgaatgatag  | ggaatgctag | ccagcgaaca  | agatttagagc | 120 |
| acagaaagta  | tagccagcga | atcaacagca  | taacaactta | gagattttctt | gcattcccca  | 180 |
| gacggtatca  | agtcatagtg | gagaataatc  | ataataagat | ttgtgaaaat  | gtttgtgtag  | 240 |
| attaatgtgt  | aaaattcaat | ccatcaacca  | tgaagtgaag | tgcattccgt  | ttttaaatgt  | 300 |
| ttattgtatt  | tgaatgaata | aacagtttac  | acgcgaaaat | ccctacttta  | tgtgcgtaca  | 360 |
| aactatgatt  | tttttgcagt | atataaaaagt | ttccactatc | gtaattattt  | tccagatccg  | 420 |
| tcttcttaac  | aacccgattt | cctagcatcc  | atctgcgtgg | aataaatcta  | ttgaattatt  | 480 |
| aacccttggtg | attggctaaa | aaaaaaaa    |            |             |             | 507 |